INSTITUTE *of* STATISTICS
Oxford

Bulletin Vol. 15 *February & March 1953* *Nos. 2 & 3*

NATIONAL SURVEY OF PERSONAL INCOMES AND SAVINGS

PART II

THE DISTRIBUTION OF PERSONAL INCOMES

This is the second paper in the series devoted to the results of the National Survey of Personal Incomes and Savings. The first paper gave a brief outline of the aims of the survey, the methods employed and the general findings.[1] One important section of those findings related to the distribution of personal incomes. It is now our task to examine this distribution more closely : to compare it with the figures published by the Inland Revenue; to consider the distribution of incomes of people of different occupations, ages, and so forth; and to analyse total personal income into its component parts, showing what proportion comes from earnings of employment and what proportion from other sources. We shall further consider the incidence of direct taxation and the distribution of incomes after tax. This leads finally to a discussion of the net effect of direct taxation and government transfers on various sections of the population.

DEFINITION OF PERSONAL INCOME

Personal income can be defined in various ways. Firstly, the number and the sort of persons who form a single unit for this purpose must be specified. In studies of personal expenditure it is the usual practice to treat the *household* as the unit : the incomes of all its members are aggregated and treated as if they were one income. But according to the common definition of a household, many households contain people who are not related to the head of the household, such as boarders and servants. For some types of analysis it is desirable to exclude these unrelated persons and to concentrate attention on the income of the *family*. In that case the income that comes under consideration is the aggregate income of all persons who are related to one another and live together in the same household. But from the point of view of a study of saving habits even the family may be too wide a group. Although members of a family living together commonly share the housekeeping expenses it does not follow that all of them pool the *whole* of their incomes. Grown up sons and daughters, for example, who have separate sources of income, will not usually put the whole of their income into the common pool : they will contribute a specified amount to the general housekeeping expenses, or pay certain items such as the rent; and they may from time to time make further voluntary contributions. But their commitments are limited : they dispose of their own incomes in their own right. The exceptions to this general rule are usually children who, having but recently started work, give the whole of their earnings to their parents and receive back a small amount of pocket money.

---

[1] BULLETIN, Vol. 14, Nos. 11 and 12, November–December, 1952.

The income unit which is used in this survey is therefore smaller than that which is commonly used in studies of family, or household, income and expenditure. In principle it includes all the persons who live together, are related, and pool their incomes. In practice it is sometimes difficult to decide whether people pool their incomes or do not pool their incomes; and for practical operational simplicity the definition of the income unit is based on age and closeness of relationship rather than on an inquiry into whether incomes are pooled or not. The *Income Unit* is therefore defined as follows : (1) all single persons of 18 or over, whether living alone or with other members of their family, are regarded as separate income units; if they have dependent children of their own (of under 18), as may happen in the case of widows and divorced and separated people, their children form part of their income unit; (2) married couples living together are assumed to pool their incomes and each couple is counted as a single income unit; and their children of under 18 are also included in their income unit. The only exception to these rules is made in the case of a single person of 18 or over who has no appreciable income of his own, *i.e.*, less than £50 a year, and who is living with relations. Such a person is assumed to be a dependant of his relations and to form part of their income unit. There were only a few cases of this sort in the sample.

The second aspect of personal income that has to be defined is the types of *income* that are to be included. Here again the definition depends on the purpose of the analysis. For example, the definition of personal income used in the official estimates of national income is different from that used by the Inland Revenue when assessing income for the purposes of tax. Although certain major forms of income are included in all definitions of personal income, the differences amount in the aggregate to quite substantial sums. In this survey the chief focus of interest is in the factors that influence personal saving; and the types of income included in the survey definition of income are determined by this consideration. Two main definitions of income are used in the survey: the first, income before tax, is called *gross income*; the second is what is left of gross income after deduction of liability for income tax, surtax and national insurance contributions, *i.e.*, the direct taxes on income, and is called *net income*. Gross income is taken to include all the cash income of the income unit (before tax) but not income in kind—such as the net annual value of owner-occupied houses or the free board and lodging of indoor domestic servants—except in the case of farmers where an estimate was asked for of the value of produce consumed in the home. It includes several sources of income that are not assessable for income tax: for example, war disability pensions, certain national insurance benefits, co-op dividends, and private allowances received from relations or friends. No deductions were made for the expenses allowed by the Inland Revenue to wage and salary earners, *e.g.*, tool and clothing allowances and part of the cost of national insurance contributions. On the other hand the incomes of people in business on their own account, such as shopkeepers, farmers and professional people, were measured in the same way as they would be for income tax purposes, *i.e.*, allowable business expenses were to be deducted. Similarly people in receipt of rents from property were asked to quote the amount receivable before tax but after deducting normal repair allowances. No account was taken of income received from boarders where there were not more than three boarders in the house, since it is difficult to decide how much profit is earned from such a source; but people who took more than three boarders were regarded as being in business as commercial boarding-house keepers and were asked to quote the profits arising therefrom. People who let rooms to lodgers, without supplying food, were asked to give the total income received; and two-thirds of this was estimated to be profit.

As can be seen, the survey definition of personal income differs in a number of respects from the definitions employed, on the one hand, by the Central Statistical Office in their estimates of national income, and, on the other, by the Inland Revenue. The Central Statistical Office do not make an independent estimate of the distribution of individual incomes;[1] the only comparisons that can be made between their figures and those arising from the survey are comparisons of aggregates, such as total personal income from all sources, or the total amount of wages and salaries received and so on. For these comparisons it is not necessary to adjust the income of each income unit separately: it is sufficient to make an adjustment to the total figures for all income units; and this can be done by comparing the two definitions of income and estimating the aggregate amounts of income included in one definition and excluded from the other, or vice versa.[2] The Inland Revenue, on the other hand, publish estimates of the distribution of individual incomes by groups of ' net income ', *i.e.*, total assessable income after deduction of allowances made under Schedule E for expenses and for interest paid.[3]

In order that a useful comparison might be made between the survey's results and the Inland Revenue's figures of the distribution of incomes there was worked out, for each income unit separately, the amount of income that would be assessable for income tax. For this purpose it was necessary to exclude all non-assessable forms of income and to split up income units which contained children with subsidiary earnings. From the point of view of the Inland Revenue such children are separate income units: their income is not included in the income of their parents and, if they earn more than £135, they are separately assessed. The result of these adjustments is to arrive at a type of income called *statutory income*. It corresponds very closely with what the Inland Revenue call ' actual income ' or, in Table 90 of the *94th Report*, ' total gross income '. It does not correspond, unfortunately, with the Inland Revenue's ' total net income ' (also in Table 90) which is the income according to which incomes are grouped in the Inland Revenue tables; but the difference between the two, which is made up of the Schedule E deductions and allowances for interest paid, can if necessary be allowed for.

---

[1] The table published in previous National Income White Papers is a condensed version of the Inland Revenue figures. In the latest report, *National Income and Expenditure, 1946–51*, this table is omitted. It is expected to appear in the next issue of the *Annual Abstract of Statistics*.

[2] These differences of definition are listed in Appendix 2.

[3] The latest figures available at the time of writing were those given in the *94th Report of the Commissioners of His Majesty's Inland Revenue*, Cmd. 8436. See especially Tables 90 and 110.

Finally, by way of definition, it is necessary to remind the reader that the survey figures relate to income units living in private households only in Great Britain and that their incomes refer approximately to the financial year 1951–52, *i.e.*, the year ending April 5th, 1952. No interviews were made in Northern Ireland or amongst people living in hotels, boarding-houses, hospitals, schools, prisons or other institutions. Members of the Armed Forces were also excluded from the inquiry, but their wives and dependants, if living in private households, were included.

THE DISTRIBUTION OF GROSS INCOME AND OF STATUTORY INCOME

The distribution of gross income for 1951–52, on the survey definition, is compared in Table 6 with the distribution of statutory income for the same year; and this in turn is compared with the distribution of income shown by the Inland Revenue for 1949–50. It will be seen that the main difference between gross income and statutory income is that statutory income is lower: there is a considerably greater proportion of statutory incomes below £135 than there is of income units whose gross income is below this level; there is a slightly larger proportion between £135 and £199; and there is a smaller proportion of statutory incomes at all higher levels of income. Part of the reason for the lower level of statutory income is the exclusion from it of certain sources of income, *i.e.*, those forms of income that are not assessable for tax. But the main difference arises from treating children under 18 as separate units: they earn much lower incomes than adults and their inclusion tends to swell the frequency of incomes at the lower end of the scale. Frequency distributions of the statutory incomes of adults and children are shown separately in Table 7, from which it will be seen that, even when no account is taken of children with incomes of less than £50, 70 per cent of children under 18 have incomes below £135. The average income of all children who receive an income of £50 or more is £120, and their inclusion as separate units has the effect of reducing considerably the average for all incomes. Thus, while average gross income per income unit is £424, the

TABLE 6

The Distribution of Personal Incomes, as shown by the Survey and the Inland Revenue

Income group	*Survey*			
	(1) *Gross income*[1] *1951–52* %	(2) *Statutory income*[2] *1951–52* %	(3) *Inland Revenue (unadjusted)*[3] *1949–50* %	(4) *Difference Col. (2)—Col. (3)*
£0—134	14.2	18.0	18.0	—
£135—199	9.8	10.3	15.0	— 4.7
£200—299	14.2	13.9	24.4	—10.5
£300—399	20.6	19.8	19.2	+ 0.6
£400—499	16.0	15.3	10.6	+ 4.7
£500—599	9.8	9.0	5.2	+ 3.8
£600—699	5.4	4.8	2.4	+ 2.4
£700—799	3.1	2.7	1.3	+ 1.4
£800—999	2.9	2.4	1.2	+ 1.2
£1,000—1,499 ...	2.3	2.1	1.2	+ 0.9
£1,500—1,999 ...	0.79	0.76	0.5	+ 0.26
£2,000 and over ...	0.94	0.89	0.96	— 0.07
Total	100.0	100.0	100.0	—

[1] Total income of income units before tax.

[2] Income assessable to tax. Certain categories of income, *e.g.*, war disability pensions, certain national insurance benefits, co-op dividends and private transfers, are excluded; and the incomes of children under 18 are no longer added to those of their parents (to arrive at the total income of the income unit) but are taken separately. For the latter purpose any child whose income was £50 or more was regarded as having an ' income ' while those whose incomes fell below this level were ignored.

[3] These figures are based on Table 90 of the *94th Report of the Inland Revenue*, Cmd. 8436. It was assumed that the number of incomes below the £135 exemption limit was in the same proportion as was found to be the case in the survey, *i.e.*, 18 per cent of all incomes or, in round numbers, 4½ million.

TABLE 7

Statutory Incomes of Adults and Children

Statutory income	*Adults of 18 and over*[1] *(per cent of all incomes)* %	*Children under 18 with incomes of £50 and over*[2]		*All incomes (percentage distribution)* %
		Percentage distribution %	*Per cent of all incomes* %	
£0—99	9.2	40	1.7	10.9
£100—134	5.9	30	1.2	7.1
£135—199	9.4	20	0.9	10.3
£200—299	13.6	9	0.3	13.9
£300—399	19.8	1	—	19.8
£400 and over	38.0	—	—	38.0
Total	95.9	100	4.1	100.0

[1] The figures in this column give the distribution of the statutory incomes of single persons of 18 and over and of married couples, excluding the incomes, if any, of their children.

[2] Only children with incomes of £50 and over are regarded as having an ' income '

effect of the exclusion of non-assessable forms of income is to reduce average income per income unit to £416, and the average is further reduced, when children's incomes are counted separately, to £400.[1]

It should be noticed in passing that according to the survey estimate there are 18 per cent of incomes below the income tax exemption limit. This is a remarkably large figure which, if it can be applied to the U.K. as a whole, means that there are about 4½ million incomes of less than £135. Of course it is difficult to say exactly at what point a person should be counted as having an 'income'; and any estimate of the number of incomes at the bottom end of the scale depends on what rule is applied in this respect. For the purpose of the above estimate, with one slight exception, no person or family was held to have an income unless they had at least £50. The exceptional case was that of the adult person or family living on their own with a gross income of less than £50. There were only 6 cases of this sort in the sample. Most of the people with statutory incomes below the exemption limit are either children under 18 or retired and unoccupied persons. In detail, 16 per cent of them are children under 18 and 69 per cent retired and unoccupied. Of the remaining 15 per cent, 4 per cent are clerical and sales workers (mostly young typists and shop assistants); and most of the others are young people between 18 and 20, people who have been out of work for part of the year, or part-time workers.

Comparison of Inland Revenue and Survey Figures

It is naturally very desirable that the information provided by the survey on the distribution of incomes should be compared with information from outside sources. But the only outside source available is the tables published by the Inland Revenue, of which the most up-to-date are those relating to the year 1949–50.[2] The figures given in Table 6 are taken from the Inland Revenue's *94th Report*, and they represent the results of the special income census that was taken by the Inland Revenue on the assessments relating to that year. On examination of these results the Inland Revenue came to the conclusion that there had been an under-assessment of wives' earned incomes and of unearned income taxable at the source. There may, of course, have been under-assessments in other respects also, especially of the profits of individuals and firms; but about this there is no reliable information on which to base a judgement. The Inland Revenue proceeded to adjust the results of their census with the aim of incorporating the estimated amounts of under-assessment for the two items specified; and their adjusted table is published as Table 110 of the same report.

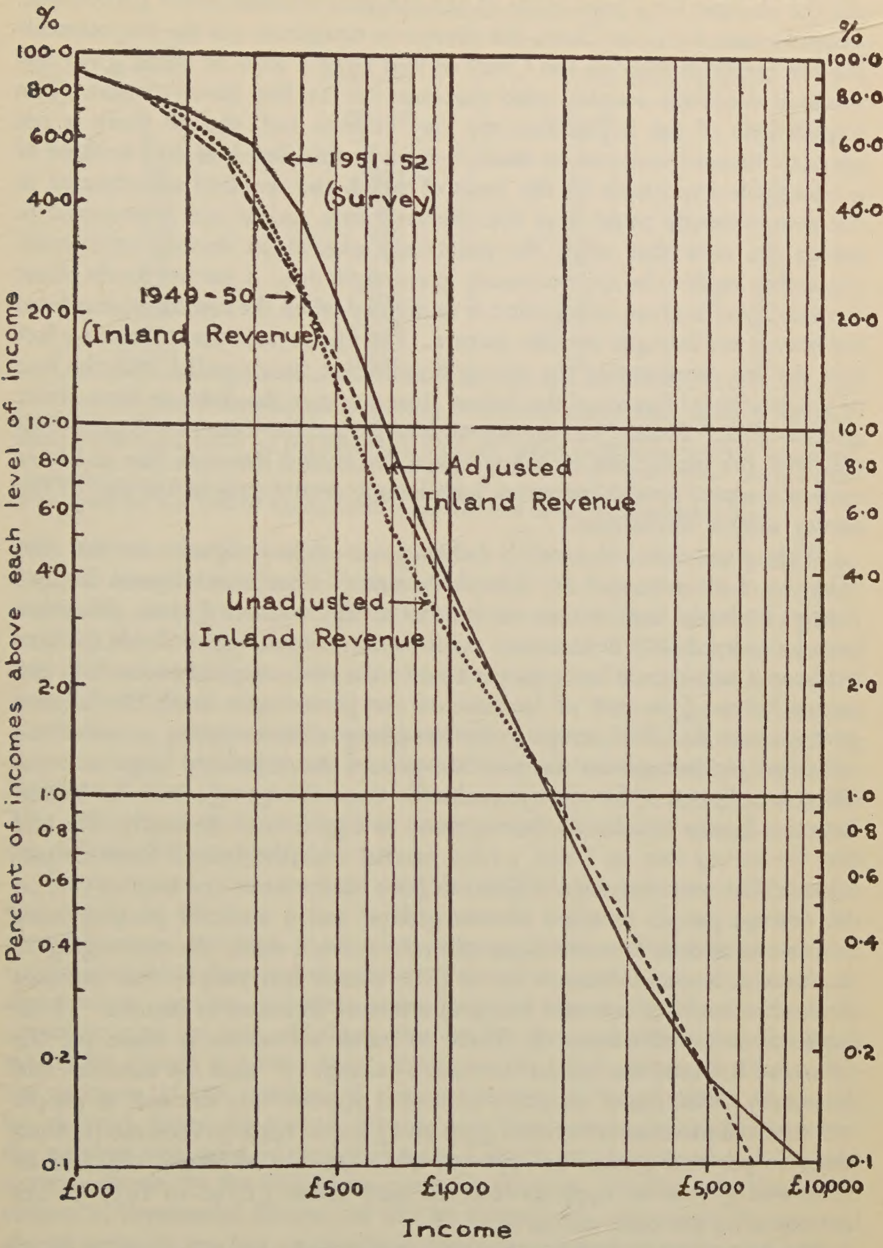
The results of the Inland Revenue's method of adjustment can be seen in Chart 3, where the cumulative percentage of incomes above each level of

[1] These figures may not be strictly accurate because the survey estimate of total government transfers received is on the low side; this is probably due to the fact that in many cases small receipts of health and unemployment benefit were not reported. And the same may be true of co-op dividends. Hence the margin between statutory income and gross income, before separating the children, would appear to be slightly less than it really is.

[2] This was true at the time of writing. While this paper was in proof the Inland Revenue published its *95th Report*.

CHART 3

Comparison of Inland Revenue and Survey Distributions of Personal Income



NOTE.—The percentage of incomes above each level of income has been plotted on a double-logarithmic scale. The survey line is based on the distribution of statutory income, as defined in the text.

income is plotted against that level of income, on a double logarithmic scale. All the changes have been made in the ranges of income below £2,000 and, as can be seen from the Chart, the effect is to straighten out the line connecting the points plotted on the Chart so that from a level of about £250 upwards it conforms roughly with the slope of the line above £2,000. The implications of this adjustment are very curious and, though there is not space to discuss the matter in detail, it must be said that it is hard to think of a reasonable hypothesis on the basis of which the required adjustments to the census results could have the effects shown, unless one is prepared to accept the view that when the points are plotted on double logarithmic paper they *ought* to be approximately in a straight line. A natural doubt about the validity of such an assumption is reinforced when the results arising from the survey are brought into the picture. For this reveals the interesting fact that the line representing the survey distribution runs parallel with the line of the *unadjusted* figures of the Inland Revenue over the distance from about £200 to £800. From £800 up to just over £1,500 the lines converge; above this level the survey line is at first below the Inland Revenue line and later crosses it again, proceeding on an increasingly erratic path as the size of the survey sample diminishes.

What does this relationship between the survey figures on the distribution of incomes and the Inland Revenue's unadjusted figures imply ? Firstly, it clearly implies that, except in the region above £2,000, there has been an upward shift in incomes. As shown in column (4) of Table 6, there has been a reduction of over 15 per cent in the percentage of incomes in the groups below £300 and an increase in the percentages in all the income groups above this level except in the last group. The sampling errors of the estimated percentages in the two last groups are relatively large and the differences between the survey results for these two groups and the Inland Revenue figures should not be regarded as significant. Secondly, the fact that the survey line on Chart 3 runs parallel with the Inland Revenue unadjusted line over the range of £200 to £800 on the latter line implies that on the average people in these income groups had a constant proportionate increase in income between 1949–50 and 1951–52; while the converging of the lines at levels of income above £800 means that people with incomes above this level had less and less proportionate increases in income. These implications are illustrated in Table 8. After allowance is made for the difference between the Inland Revenue's concept of ' total net income ' and the survey definition of statutory income it appears that the sort of people who received incomes of between £200 and £800 in 1949–50 received incomes about 20 per cent greater in 1951–52; while the sort of people who had an income of £1,000 in 1949–50 received only about £1,140 in 1951–52 (an increase of 14 per cent) and so on.

The question is : Is this a plausible interpretation of the course of events in the period under discussion ? And if it is, are we to believe that both the Inland Revenue's unadjusted figures and the survey's figures are approxim-

TABLE 8

Increase in Incomes between 1949–50 and 1951–52

Income level in 1949–50 £	*Approximate equivalent income in 1951–52*[1] £	*Increase between 1949–50 and 1951–52*	
		Amount £	*Per cent* %
200	240	40	20
300	360	60	20
400	480	80	20
500	600	100	20
600	720	120	20
700	840	140	20
800	960	160	20
1,000	1,140	140	14
1,200	1,320	120	10
1,500	1,550	50	3

[1] The cumulative distribution of incomes in 1949–50 (taken from Table 90 of Cmd. 8436) was compared graphically on double-log paper with the cumulative distribution of statutory incomes shown by the Survey for 1951–52. From each figure for 1951–52 arrived at in this way there was subtracted the average amount of ' deductions ' made by the Inland Revenue from gross income at each level of income in 1949–50. This has the effect of bringing the two sets of figures on to a more or less identical definitional basis.

ately correct reflections of the true position ? Or could it be that, while they are both inaccurate in some degree as snapshot photographs, they represent reasonably well by their differences the movement that has taken place between the two periods of time to which they refer ? These questions are very difficult to answer. We must admit, firstly, that the Inland Revenue's unadjusted figures are certainly too low, at least for the two types of income specified, *i.e.*, wives' earnings and investment income. The total amount of income needed to compensate for these deficiencies is estimated by the Inland Revenue at over £300 million, or about 4 per cent of the unadjusted total. The difficulty is to know how this extra income should be spread amongst the different income groups.

In the second place, we must consider whether the same sort of deficiencies would be likely to occur in the incomes reported in the survey. In regard to wives' earnings, there is no evidence that the survey failed to obtain full information. Survey interviewers were given special instructions to ask about wives' incomes and there seems to be no reason why a man who had agreed to give the sort of information on his financial affairs that we were asking for should suppress facts relating to his wife's earnings. Moreover, the estimate of the number of married women in employment that can be derived from the survey (about 3 million) corresponds closely with the number estimated by the Ministry of Labour, and is more than twice the number shown by the Inland Revenue for 1949–50. On the other hand, in respect of investment income, as will be shown later, the survey figures are almost certainly too low, especially in the higher income groups ; and it may well be that the survey tends to under-estimate the proportion of people in these upper income groups.

The only outside statistics available on the change in incomes in this period are the official national income estimates.[1] These show that, while wages and salaries rose between 1949 and 1951 by 17 per cent and 19 per cent respectively, profits of private businesses, farming and the professions increased by only 5 per cent and personal investment income actually fell a little. These figures are not inconsistent with the general trend of income changes shown in Table 8 : for, as can be seen from Appendix Table 10, people with incomes of £1,000 and over derive a much larger proportion of their total income from profits and investment than those with incomes below this level; and hence, if wages and salaries increase in greater proportion than profits and investment incomes, lower incomes will tend to rise faster than upper incomes.

It seems reasonable to conclude that the shift in incomes indicated in Table 8 is broadly of the right sort but tends to over-estimate the increase in the lower and middle incomes—because the survey figures include more wives' earnings than the Inland Revenue—and to under-estimate the increase in the upper incomes—because of a tendency for people with large investment incomes either to evade the survey altogether or to fail to report fully on income from this source.

THE CONCENTRATION OF INCOME

The concept of statutory income was introduced only for the purpose of making a comparison between the survey's results and the Inland Revenue's figures. Now that this matter has been dealt with we shall revert to the standard categories employed in this analysis, namely, gross income per income unit and net income per income unit.

Table 9 shows the amount of total gross income taken by each income

TABLE 9

Amount of Gross Income taken by each Income Group

Gross income	*Per cent of income units* %	*Average income in each group* £	*Per cent of total income taken by each group* %	*Cumulative per cent of total income* %
£0—99	7.8	77	1.4	100.0
£100—199	16.2	148	5.6	98.6
£200—299	14.2	253	8.4	93.0
£300—399	20.6	348	16.8	84.6
£400—499	16.0	446	16.7	67.8
£500—599	9.8	554	12.7	51.1
£600—699	5.4	644	8.2	38.4
£700—799	3.1	747	5.5	30.2
£800—999	2.9	870	5.9	24.7
£1,000—1,499 ...	2.3	1,171	6.3	18.8
£1,500—1,999 ...	0.8	1,727	3.2	12.5
£2,000 and over ...	0.9	4,187	9.3	9.3
Total	100.0	424	100.0	100.0

---

[1] *National Income and Expenditure, 1946–51,* Tables 2 and 14.

group; and this can be compared with the percentage of income units falling in each group. It can be seen, for example, that 24 per cent of income units, with a gross income of less than £200 each, took between them 7 per cent of total gross income; while at the other extreme 4 per cent of income units with incomes of £1,000 and over received nearly 19 per cent of the total. These differences, though great, are probably not as great as they were before the war and, of course, as will be seen later, the degree of inequality of income after tax is less than the degree of inequality of income before tax.

The same information on the concentration of gross income is analysed in a slightly different manner in Table 10, where income units are grouped into ten groups of equal frequency after being ranked according to their gross income. From this it can be seen that the top tenth of income units received 30 per cent of total gross income, the next tenth 14 per cent, and so on. At the other end of the scale, the bottom tenth of income units received only 2 per cent of gross income. The table also shows that, for example, the top tenth of income units covers those with gross incomes of £700 and over, while the bottom tenth consists of people with gross incomes of less than £110.

TABLE 10

Income Units Ranked by Tenths according to Gross Income

Tenths of income units after ranking by gross income	*Per cent of total income taken by each tenth* %	*Cumulative per cent of total income* %	*Average income of each tenth* £	*Lowest income of each tenth* £
Top tenth	30	30	1,280	700
2nd tenth	14	44	610	535
3rd tenth	12	56	500	460
4th tenth	10	66	430	405
5th tenth	9	75	380	355
6th tenth	8	83	330	310
7th tenth	7	90	280	245
8th tenth	5	95	210	170
9th tenth	3	98	140	110
Bottom tenth	2	100	83	—

THE GROSS INCOME OF INCOME UNITS OF VARIOUS TYPES

On the matters discussed so far the evidence offered by the survey is only supplementary to what is already known from other sources, in particular from the Inland Revenue. But we now proceed to use the survey data for a type of analysis that cannot be made from the official figures as at present compiled. It is at this point, perhaps, that the survey's results can be said to begin to make an original contribution to the discussion of the problems of income distribution.

This contribution arises from the fact that every income unit interviewed in the survey was classified according to a wide variety of characteristics apart from the measures of its financial affairs. It is therefore possible to examine the income distribution of income units of any of these defined types. For example, we can consider the income distribution of income units whose heads are of a given occupational group, or of a certain age or sex, and so on. A number of these distributions are shown in Table 11. In the first five columns of the table the distribution of income within each group is given in summarised form; then for each group we have (1) the number of interviews that were made amongst people of that type,[1] (2) the 'mean' or

---

[1] It should be noted that, as a result of the special methods of stratification and weighting of the sample, the number of interviews with each type of income unit cannot be used as a direct estimate of the proportion of such income units in the population. The estimates published in the tables in percentage form are derived by weighting up the sample results so as to allow for variations in the effective sampling rate of each stratum of income units.

TABLE 11

Gross Income of Income Units of Various Types
(percentage distributions)

Type of income unit	*Income before tax*					*All in group*			
	Under £200	*£200 –399*	*£400 –599*	*£600 –999*	*£1,000 and over*	*Per cent*	*No. in sample*	*Mean £*	*S.D. £*
All income units ...	24	35	26	11	4	100	2,598	424	584
Occupation of head									
Self-employed ...	8	22	23	21	26	100	230	927	1,620
Managers, etc. ...	*	6	21	46	27	100	259	1,026	1,200
Clerical and sales ...	19	40	29	10	2	100	330	393	226
Skilled manual ...	6	39	42	13	*	100	807	430	161
Unskilled manual ...	17	56	22	5	—	100	388	333	143
Retired, etc.	75	20	3	1	1	100	571	180	227
Age of head									
18–24	38	50	8	4	—	100	296	260	144
25–34	6	39	37	16	2	100	456	461	295
35–44	6	32	37	19	6	100	492	511	347
45–54	9	35	33	15	8	100	499	593	1,094
55–64	24	36	26	9	5	100	382	432	539
65 and over	67	22	6	2	3	100	473	221	297
Sex of head									
Male	12	35	33	15	5	100	1,918	498	650
Female	60	34	4	2	*	100	680	197	149
Size of town									
Conurbation	21	33	27	15	4	100	964	444	499
Other urban	26	35	27	9	3	100	1,167	392	405
Rural	25	38	21	11	5	100	467	467	975
Number of persons									
One	50	39	8	2	1	100	987	232	195
Two	17	32	32	13	6	100	731	517	883
Three	2	38	34	20	6	100	412	533	371
Four	1	29	48	17	5	100	297	570	564
Five	2	28	41	22	7	100	115	599	795
Six or more	—	20	49	30	1	100	56	519	176
Manual workers by industry									
Manufacture-metal ...	4	39	37	20	*	100	237	452	174
Manufacture-other ...	12	42	37	9	*	100	283	387	157
Agriculture, mining, building	8	47	38	7	—	100	283	391	143
Utilities and distribution	2	50	37	11	—	100	222	424	151
Services and administration	26	46	20	8	—	100	170	323	166
All manual workers	10	44	35	11	*	100	1,195	398	163

Note; * = Less than one-half of one per cent. — = Nil.

average income per income unit and (3) the standard deviation of the income units of each group. This last figure is mainly of technical interest to the statistician (it can be used for example to provide an estimate of the significance of differences between the means of different groups) but the general reader may find it a useful measure of the degree to which income units of any specified type are either scattered or concentrated around their mean. If the standard deviation of any group of income units is large in relation to its mean the group may be considered a heterogeneous one, a mixture of types; if the standard deviation of a group is small in relation to its mean the group may be considered a relatively homogeneous one. As will be seen from the section of the table in which various occupational groups are taken separately, the two groups of manual workers—skilled and unskilled—are relatively homogeneous in respect of income, while the self-employed group, on the other hand, contains people with a wide variety of incomes. What this means in practice is that large incomes—of £1,000, £2,000 or more—occur more frequently in the self-employed group than amongst manual workers but not with such frequency as to remove all the self-employed, or even a majority of them, into the upper ranges of incomes.

Occupational Differences

The analysis of income units by occupation shows that incomes of £1,000 a year and over occur, with rare exceptions, only amongst the self-employed—*i.e.*, those in business in such occupations as shopkeeping, farming and the professions—or amongst managers, technical and professional employees.[1] But whereas a negligible number of managers have incomes of less than £200, there is an appreciable number of people in business on their own account who receive fairly small incomes. To be one's own master is no guarantee of prosperity, though it may be a source of other satisfactions. The largest proportion of low incomes occurs amongst the retired and unoccupied—mainly pensioners, widows and the unemployed: three out of four of this group have less than £200 a year and only one in twenty have more than £400 a year. A comparatively large proportion of low incomes is found also amongst clerical and sales workers and amongst unskilled manual workers: in both cases this is associated with the existence of a large proportion of female workers in these groups.

Turning now to the column of averages, we find that the average gross income of both the self-employed and managers is in the region of £1,000 a year; but, as can be seen from the size of the standard deviations (as well as from the frequency distribution itself), there is a wide dispersion of incomes within each of these groups, especially amongst the self-employed. The average income of skilled manual workers is £430, which is about £100 a year more than the average for unskilled manual workers. This difference is an effect not only of occupation but also of sex. It is well-known that women receive lower rates of pay than men, even in similar occupations. Since the unskilled manual worker group contains 24 per cent of women as against only 7 per cent of women in the skilled manual worker group, the difference of £100 a year in their average incomes is the combined result of the lower rates of pay of unskilled manual workers as such and of the greater proportion of female workers in the unskilled manual worker group.[1] The same influence is at work in keeping down the average income of clerical and sales workers, 40 per cent of whom are females. Amongst the retired and unoccupied, however, although over half of the group are females, the difference in the sex composition of the group is of much less importance than the absence of the earnings of a gainful occupation.

---

[1] For definitions of the occupational groups see the appendix to the previous paper in this series.

The distribution of incomes in the different occupational groups is illustrated in Charts 4a and 4b. For each occupation the percentage of income units with a gross income exceeding each level of income is plotted against that level of income, on a double logarithmic scale. When the series of points for each occupation are connected we obtain curves that illustrate quite conveniently the differences between the income distributions. On the one hand, the *position* of each curve indicates the general level of income in the group to which it refers, while, on the other, the *slope* of the curve indicates the relative equality or inequality of distribution within the group. From Chart 4a it can be seen that the distribution of income within each of the two groups of manual workers is similar, and that at each point on the scale the skilled manual worker gets 20–30 per cent more than the unskilled worker. The incomes of managers, on the other hand, are on a higher level and more unequally distributed within the group. Chart 4b shows that clerical and sales workers are distributed in a manner not very different from manual workers, though more unequally, while both the self-employed and the retired and unoccupied are distributed very unequally, the one at a high level and the other at a low level. The contrast between manual workers as a whole and non-manual workers as a whole (the latter group includes the self-employed, managers and clerical and sales workers) is illustrated in Chart 5.

Age Differences

In the next section of Table 11 the income distributions of different age groups are presented ; and these are illustrated in Charts 6a and 6b. It is evident from a study of the figures, as well as from the Charts, that there is a life cycle in personal incomes. Young people, under 25, start with comparatively low incomes : over a third of them have less than £200 and none of them, in this sample, have as much as £1,000. Their average income, however, is £5 a week and, since nine-tenths of them are single,[2] they are not badly off. In fact, as will be seen later, if they are judged by their average *net* income *per person* they are the best off age group of all. But in terms

---

[1] The percentage of females in groups of income units of various types is given in Appendix Table 2 of the previous paper in this series.

[2] See Appendix Table 5 in the previous paper.

Gross Income by Occupations

CHART 4a

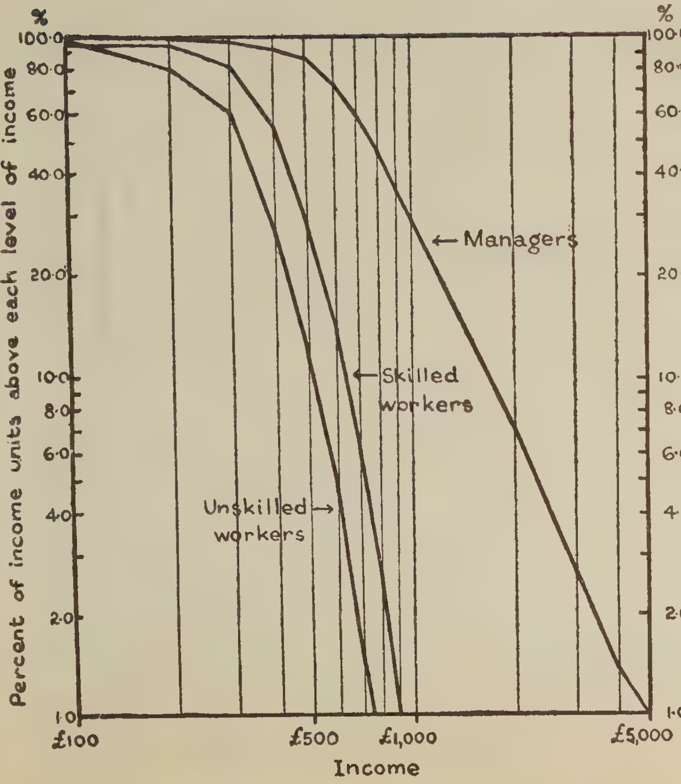
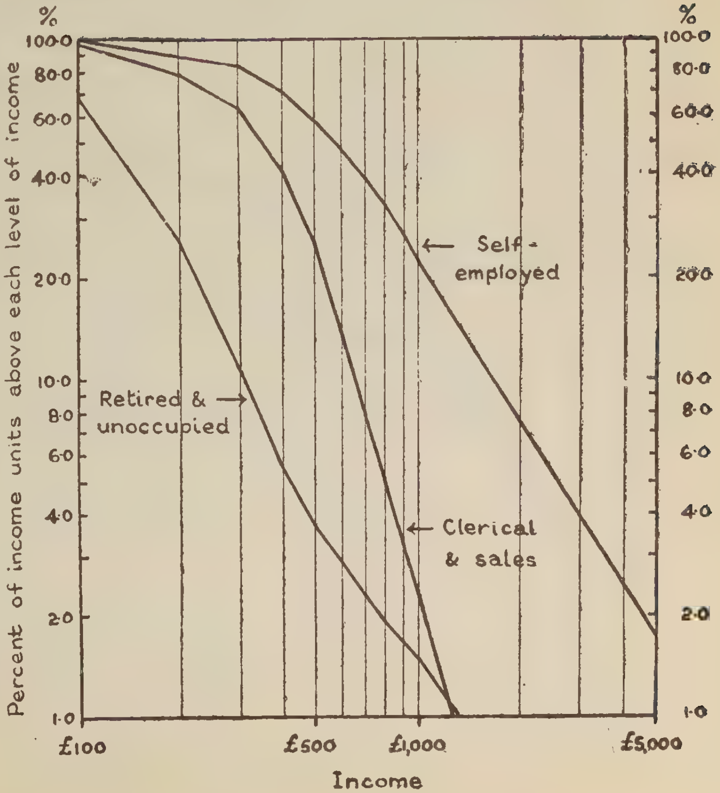


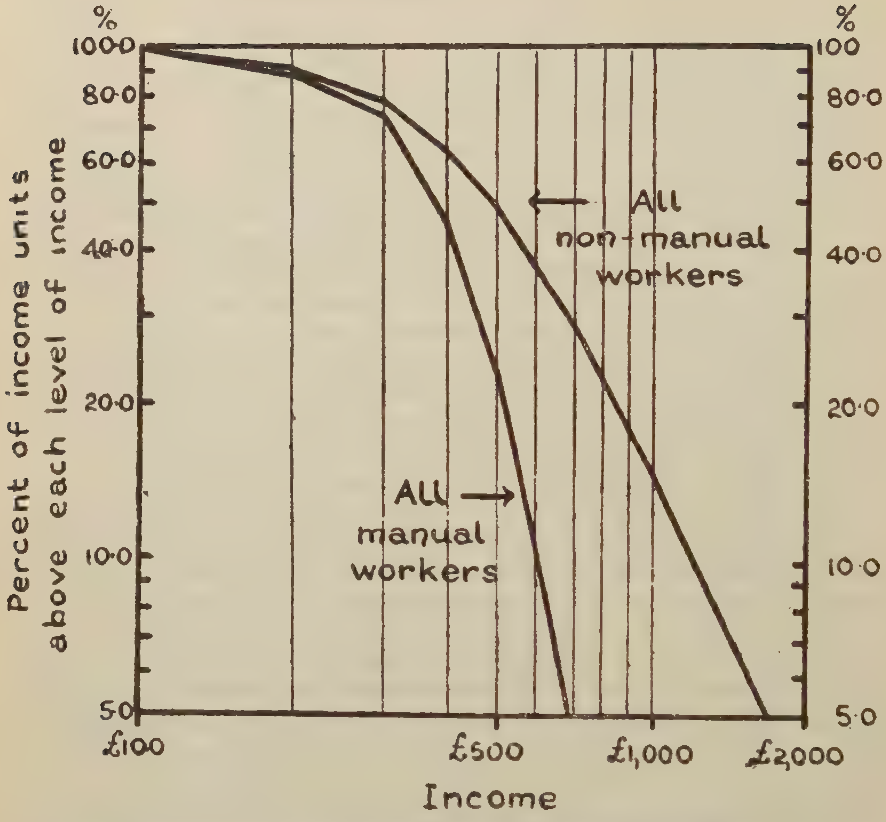
CHART 4b



NOTE.—The percentage of income units whose gross income exceeds each level of income is plotted on a double-logarithmic scale.

CHART 5

Gross Income of Manual and Non-Manual Workers



of gross income per income unit there is a marked rise from the first to the second age group. Apart from the obvious reasons for this, it should be noted that in the first age group nearly half the income units are single females, whose incomes are on the average less than those of males, while in the second age group only one-eighth of income units have female heads.[1] Between the ages of 25 and 44 the proportion of income units with female heads is at its minimum : the proportion increases again from the age of 45 as a result of the ending of marriages through death, divorce and separation, as well as on account of the superfluity of single females in the higher age groups due mainly to the heavy losses of men in the First World War. Average gross income per income unit reaches a maximum for income units with male heads in the 45–54 age group, with £680 per income unit, and for income units with female heads, in the preceding age-group, with £270 per income unit. The peak average income for both sexes combined is in the 45–54 age group, as shown in the table; but, as can be seen from Charts 6a and 6b, this is accompanied by an increasing inequality of distribution. After the age of 45 there is a temporary growth in the proportion of incomes at both ends of the scale : in the 45–54 age group there are more incomes of less than £400 as well as more of £1,000 and over than in the preceding age group and, while the increase in the proportion of low incomes is partly a result of the increasing proportion of females, it is not entirely due to this cause; the incomes of income units with male heads show the same tendency to spread out. This development could be due either to a decline in the earning power of some males at the age of about 50, or to the growing up and departure from the income unit of children who were previously contributing through their earnings. As can be seen from Table 12, the average number of earners per income unit in the 45–54 group is about the same as in the preceding group; and it therefore seems that some males suffer from a decline in earning capacity at this age.

---

[1] See Appendix Table 2 in the previous paper.

In the 55–64 age group there is a marked fall in the general level of income : nearly a quarter of the income units in this group receive less than £200, only 14 per cent receive £600 or more and their average income is £160 less than the average income of the previous age group. There are three obvious reasons for this decline : firstly, this group contains a slightly greater proportion of income units with female heads—26 per cent as compared with 21 per cent in the previous group; secondly, there are fewer earners per income unit on the average in this group than in the preceding one (see Table 12); and thirdly, there is a marked increase in the proportion of retired and unoccupied persons in this group. As can be seen from Appendix Table 8 (at the end of this paper), the percentage of retired and unoccupied heads of income units is 10 per cent in the 45–54 age group and increases to 26 per cent in the 55–64 age group; and this is accompanied by a relative growth in the proportion of heads who are unskilled manual workers compared with those who are skilled manual workers. All these influences make for a decline in the average income of the income unit; and in addition there is probably a continuation of the tendency for the earning capacity of some of the earners in this group to fall.

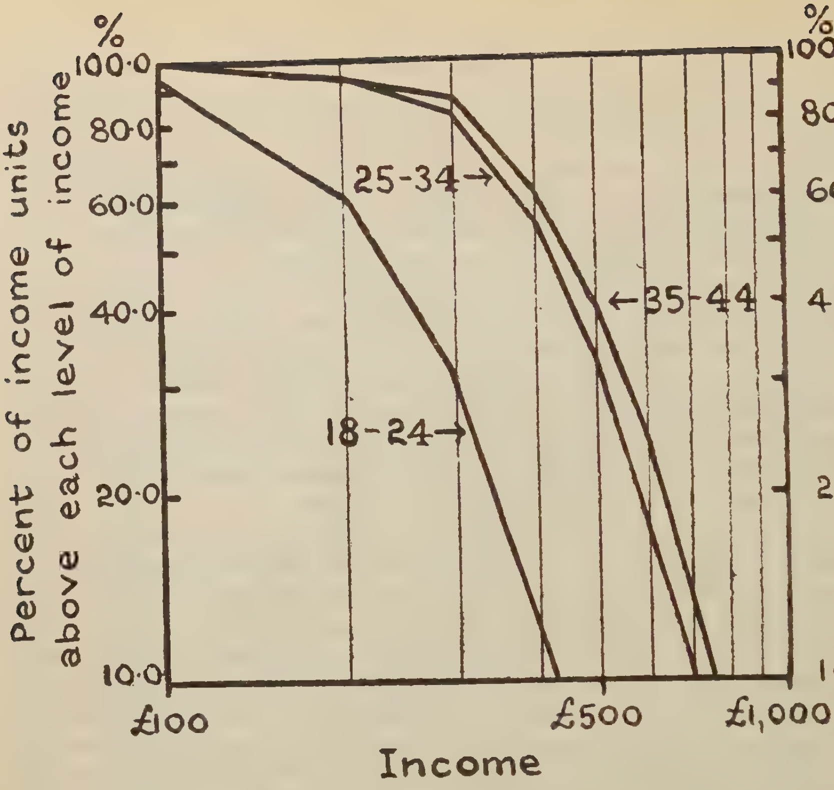
In the final age group, 65 and over, average income falls precipitately to £221. Two-thirds of the income units in this group are receiving less than £200 a year; most of these are old age pensioners whose income is about £120 if married or £70 if single. Eighty per cent of the income units in this group are retired or unoccupied (see Appendix Table 8) but amongst those with male heads only 71 per cent are not working. It is interesting to find that about 30 per cent of males aged 65 and over, apart from those in hotels and institutions, are still at work.[1]

Other Classifications

The income distributions of income units with male and female heads show striking differences. Whereas only 12 per cent of income units with

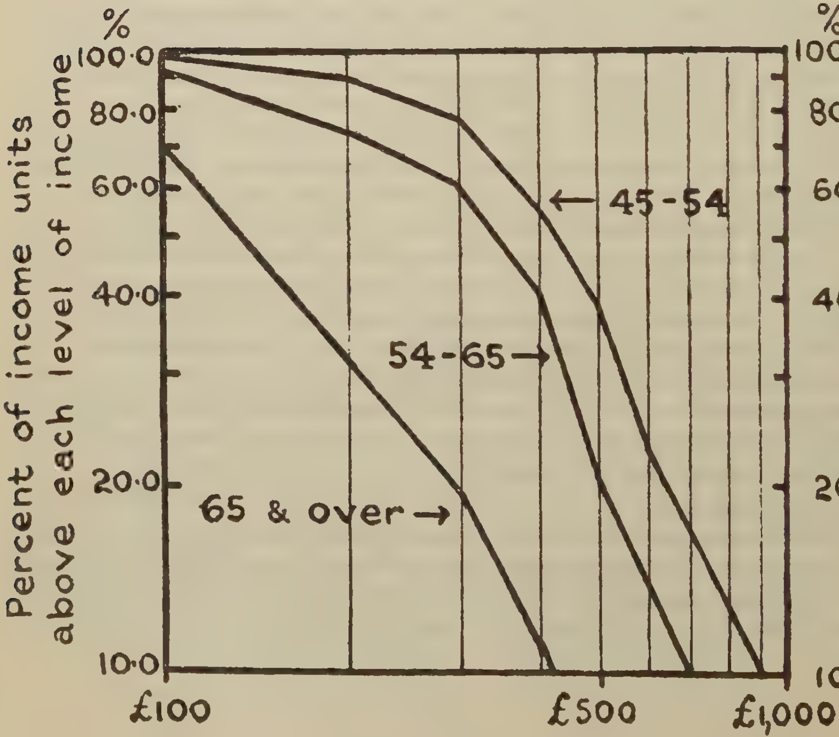
---

[1] This result conforms very closely with that shown by the 1951 Census. See *One Per Cent Sample Tables, Part I*, page 52.



%
100·0
80·0
60·0
40·0
20·0
10·0
Percent of income units above each level of income
%
100·0
80·0
60·0
40·0
20·0
10·0
25-34→
←35-44
18-24→
£100
£500
£1,000
Income

CHART 6b



%
100·0
80·0
60·0
40·0
20·0
10·0
Percent of income units above each level of income
%
100·0
80·0
60·0
40·0
20·0
10·0
←45-54
54-65→
65 & over→
£100
£500
£1,000

male heads have less than £200, 60 per cent of income units with female heads are in this category. Only 6 per cent of income units with female heads receive incomes of £400 or more. The differences in the distributions are reflected in the differences in the average income per income unit: income units with female heads have an average gross income of only two-fifths of the average for income units with male heads. These are many reasons for this difference: income units with female heads are mostly in the younger age groups, before marriage, or in the older age groups, after the ending of marriage through death, divorce or separation. These are the ages of relatively low earning capacity. Women also are employed more frequently in the less highly paid occupations, *e.g.*, as clerical workers or shop assistants or in unskilled manual work; and in many cases they receive lower rates of pay than males even in the same occupation. And finally, income units with female heads necessarily contain fewer persons than those with male heads and therefore have fewer earners on the average (see Table 12).

Incomes in the large towns—conurbations—are in general higher than incomes in small and medium-sized towns—other urban areas—with an average difference of about £1 a week. This may be due in part to the fact that there are rather more earners per income unit in the former case (it is perhaps easier for wives to get suitable work in the large towns) but this is hardly likely to be the whole explanation. Average income in the country, on the other hand, seems to be about the same as in the large towns; but this is due mainly to a greater proportion of wealthy people in the country.

When income units are classified according to the number of persons in the income unit—counting adults and children equally—we find that single person income units are at a much lower level of income than any of the other groups. Whereas single persons have an average gross income of £232, the average income of all income units containing two or more persons is £500 or more, with a slight tendency to rise as the number of persons in the income unit increases up to five. The income units in the final group—those with six or more persons—though there are rather few of them in the sample, appear to be fairly homogeneous in respect of income and to have, on the whole, rather less than the preceding two groups. The higher level of gross income of income units containing two or more persons is partly due to the fact that more than half the single person income units are females, whilst the proportion of female heads amongst multi-person income units is very small. Further, the single person income units tend to be either rather young or rather old; and finally, there are, on the average, more earners in multi-person income units.

The final section of Table 11 contains a special analysis of the income distributions of income units whose heads are manual workers—skilled and unskilled together—classified into five broad groups of industries. The analysis is not as useful as it might be because the limited size of sample makes it necessary to group together dissimilar industries, and because the proportion of female heads varies from one group of industries to another.

The main conclusions that emerge are (1) the rather higher level of income of income units whose heads are manual workers employed in the metal and engineering industries compared with those whose heads are manual workers employed in other manufacturing industries, and (2) the relatively low incomes of income units whose heads are manual workers employed in services and administration.

Table 12, to which reference has been made several times already, shows the number of earners in the income unit for the various types of income unit. An ' earner ', for this purpose, is defined as a member of the income unit whose income is £50 or over. This excludes, for example, children who have just started work in the past few weeks and wives who receive a

TABLE 12

Number of Earners in the Income Unit[1]
(percentage distributions)

Type of income unit	*Number of earners*			*All in group*		
	One	*Two*	*Three or more*	*Per cent*	*No. in the sample*	*Mean number of earners*
All income units	82	17	1	100	2,598	1.18
Gross income						
Under £200	98	2	—	100	608	1.02
£200—399	93	7	*	100	813	1.08
£400—599	69	30	1	100	636	1.31
£600—999	56	40	4	100	346	1.48
£1,000 and over	64	34	2	100	195	1.38
Occupation of head						
Self-employed	66	33	1	100	230	1.35
Managers and technical	88	12	*	100	259	1.12
Clerical and sales	86	14	—	100	330	1.14
Skilled manual	78	21	1	100	807	1.23
Unskilled manual	81	18	1	100	388	1.21
Retired and unoccupied	93	7	*	100	571	1.07
Age of head						
18—24	95	5	—	100	296	1.05
25—34	81	19	—	100	456	1.19
35—44	74	24	2	100	492	1.29
45—54	72	27	1	100	499	1.30
55—64	85	15	*	100	382	1.15
65 and over	94	6	—	100	473	1.06
Sex of head						
Male	77	22	1	100	1,918	1.23
Female	98	2	*	100	680	1.03
Size of town						
Conurbation	78	21	1	100	964	1.22
Other urban	84	15	1	100	1,167	1.17
Rural	87	12	1	100	467	1.14
Number of persons						
One	100	—	—	100	987	1.00
Two	72	28	—	100	731	1.28
Three	71	28	1	100	412	1.30
Four	76	21	3	100	297	1.27
Five	72	27	1	100	115	1.29
Six or more	61	36	3	100	56	1.43

---

[1] An 'earner' is defined as a person with a separate total income (from any sources) of £50 or over.

small amount of income in the form of interest from the savings bank, family allowances or co-op dividends. It is interesting to note that the number of earners increases as the total income of the income unit increases; this points to the fact that income from subsidiary earners is an important means of raising one's standard of living. Amongst the occupational groups the self-employed most frequently have subsidiary earners (usually the wife is employed in the business); the wives and children of white collar workers —managers, office and shop-workers—less commonly go out to work than is the case amongst manual workers; the retired and unoccupied rarely have more than one ' earner '. The other analyses in this table have been discussed above.

Income from Different Sources

Personal income may be derived from various sources of which the more important are (1) income from employment, (2) profits of privately owned businesses, (3) investment income and (4) government transfers. A fifth group, of much less importance, consists of income received from relatives or friends as a voluntary contribution to support. This type of income, which we call ' private transfers ', is a duplication in the same sense as government transfers are a duplication; but it is a form of income which cannot be ignored when we are considering the resources available to people and their propensity to save or dissave.

Employment Income

The most important source of income for most people is income from employment. This consists of wages, salaries, pensions arising from previous employment (not ' old age ' pensions, which are treated as government transfers), and earnings from odd jobs, tips, bonuses and so on. The distribution of income units according to their employment income is given in Table 13, both for all income units combined and for the various occupational groups. Eighty-one per cent of all income units have some employment income; the remaining 19 per cent are either self-employed or retired and unoccupied. The distribution of employment income (for income units with some income from this source) is illustrated in Chart 7. An obvious difference between this distribution and the distribution of total income from all sources[1] is that employment income rises to a single mode in the £300—399 group. This shows that the secondary mode which appears in the distribution of total income (in the £100—199 group) is mainly due to the shape of the distribution of income from another source, namely from government transfers.

Average employment income of all income units with income from this source is £404 and its dispersion, as measured by the standard deviation, is relatively less than the dispersion of total income. Employment incomes are not so frequently either so small or so large as incomes from all sources : the very small incomes that are found amongst the latter are mainly incomes

---

[1] See Chart 1 in the previous paper.

TABLE 13

Income from Employment by Occupations[1]
(percentage distributions)

Employment income of income unit	*Occupation of head*						*All income units*
	Self-employed	*Managers and technical*	*Clerical and sales*	*Skilled manual*	*Unskilled manual*	*Retired and unoccupied*	
Nil	62	—	—	—	—	69	19.0
£1—99	8	*	3	1	7	13	5.2
£100—199	19	*	17	6	14	10	10.1
£200—299	5	2	18	13	25	5	12.7
£300—399	2	4	23	29	32	1	19.5
£400—499	1	9	16	25	12	1	13.8
£500—599	1	14	11	14	6	*	8.4
£600—699	*	15	4	7	3	—	4.5
£700—799	1	17	4	3	1	*	2.6
£800—999	*	15	2	2	*	*	2.1
£1,000—1,499	—	11	2	*	—	1	1.2
£1,500—1,999	—	7	—	—	—	—	0.5
£2,000 and over	*	6	—	—	—	—	0.4
Total	100	100	100	100	100	100	100.0
Number in sample	230	259	330	807	388	571	2,598
For those with employment income							
Mean £	202	933	383	420	315	168	404
S.D. £	206	934	220	159	149	204	351

[1] Employment income includes income from wages, salaries, pensions from employers, casual earnings of non-professional workers, bonuses, tips, etc.

from government transfers, and many of the large incomes are the profits of private business and the professions.

Analysis by occupation shows a result which is at first sight surprising, namely, that 38 per cent of the self-employed have some income from employment. This is explained by the fact that a third of self-employed income units have subsidiary earners: in most cases it is the wife, employed in the business. Her salary is commonly £2 or £2 10s. a week, which is near the limit of what she she can safely earn without incurring liability for income tax. Managers, technical and professional employees are at a higher level of employment income than other employees: their most frequent income is in the region of £750 and their average is £933. Clerical and sales workers, many of whom are females, have relatively low incomes from employment; skilled manual workers are a little higher and less dispersed; and unskilled manual workers are considerably lower, for reasons that have been discussed previously. Thirty-one per cent of the retired and unoccupied are reported to have some income from employment! This paradox is explained partly by the existence, in a few cases, of subsidiary earners in the income unit; partly by the fact that some of the people who were retired and unoccupied at the date of the interview were working earlier in the year; and partly by the inclusion in ' income from employment ' of pensions received in respect of previous employment, *e.g.*, pensions of teachers, civil servants and people belonging to private pension schemes.

In Table 14 the employment income of other groups of income units is analysed. In general the pattern follows that already discussed in connection with gross income. One difference, however, is apparent from a comparison of average employment income for the three ' sizes of town ' with average gross income for the same categories. Whereas average gross income in rural areas is slightly greater than average gross income in conurbations (£467 compared with £444), when employment income only is taken into account the average for the rural areas is less than the average for conurbations (£363 compared with £447). It is evident from this that more of the country incomes are large incomes derived from sources other than employment, *e.g.*, profits of farming and income from investment.

Chart 7 shows the distribution of all income units according to their employment income, each income group being divided into manual workers

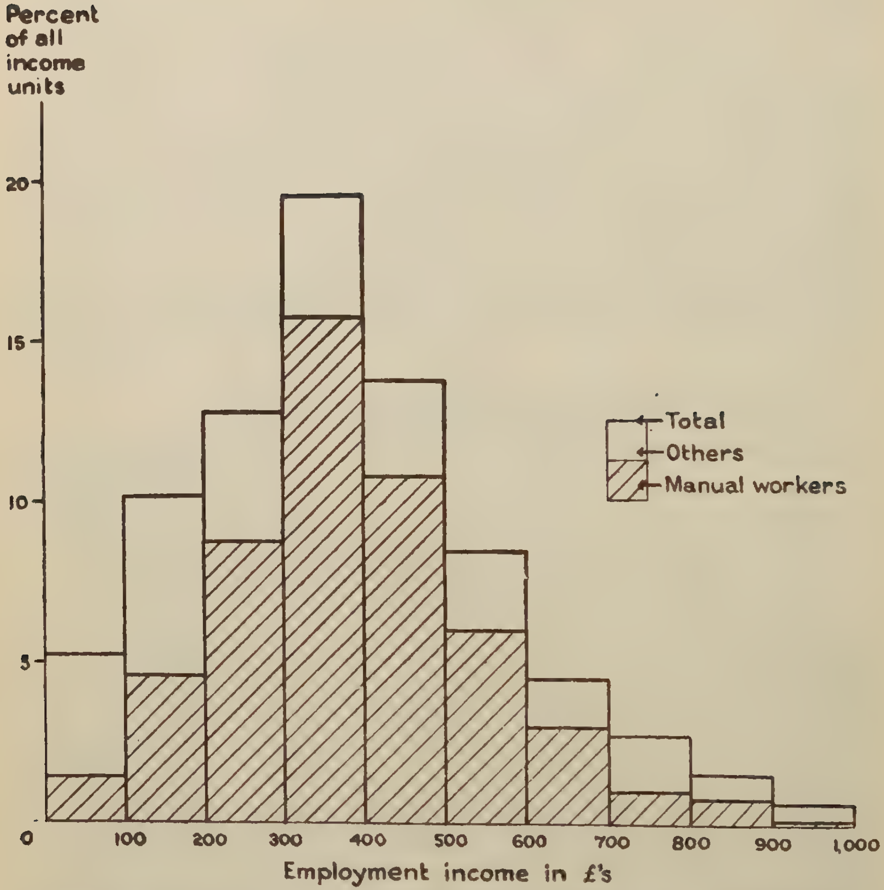
TABLE 14

Income from Employment of Income Units of Various Types
(percentage distributions)

Type of income unit	*Employment income of unit*						*All in group*		*Those with employment income*	
	Nil	*£1–199*	*£200–399*	*£400–599*	*£600–999*	*£1,000 and over*	*Per cent*	*No. in sample*	*Mean* £	*S.D.* £
All income units	19	15	33	22	9	2	100	2,598	404	351
Age of head										
18–24 ...	2	37	49	8	4	—	100	296	261	144
25–34 ...	6	6	40	34	13	1	100	456	434	182
35–44 ...	8	8	32	33	16	3	100	492	468	240
45–54 ...	14	10	31	29	12	4	100	499	491	586
55–64 ...	21	17	32	21	7	2	100	382	397	355
65 and over	60	22	13	3	1	1	100	473	230	267
Sex of head										
Male ...	12	10	34	29	12	3	100	1,918	447	370
Female ...	41	32	23	3	1	—	100	680	209	125
Size of town										
Conurbation	16	14	29	26	12	3	100	964	447	404
Other urban	20	16	32	23	7	2	100	1,167	385	338
Rural ...	22	15	38	15	9	1	100	467	363	238
Manual workers by industry										
Manufacture-metal	—	5	42	36	17	*	100	237	445	171
Manufacture-other ...	—	16	43	33	8	*	100	283	379	146
Agriculture, mining, building ...	—	10	52	31	7	—	100	283	375	144
Utilities and distribution	—	3	51	36	9	1	100	222	413	152
Services and administration	—	29	44	21	6	—	100	170	304	168
All manual workers ...	—	12	47	32	9	*	100	1,195	386	164

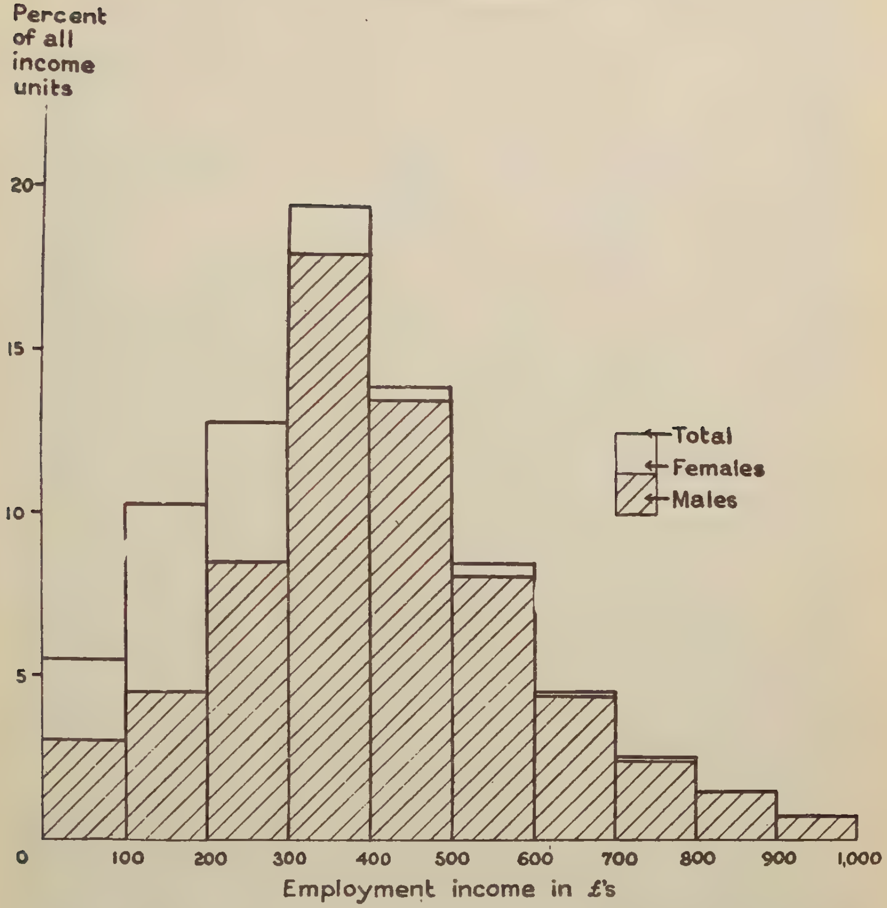
CHART 7

Distribution of Income from Employment
Manual Workers and Others



NOTE.—The chart shows, for each range of employment income, the number of income units whose heads are of each type, expressed as a percentage of all income units.

CHART 8
Distribution of Income from Employment
Males and Females



NOTE.—The chart shows, for each range of employment income, the number of income units whose heads are of each type, expressed as a percentage of all income units.

and others. The distribution of manual workers (the shaded area of Chart 7) is fairly concentrated and symmetrical while the others (a very mixed group) are very widely dispersed. Chart 8 shows the same total distribution divided into males and females : the large proportion of females in the lower income groups and the very small proportion in the upper income groups is clearly apparent.

Income from other Sources

Table 15 shows the percentage of income units receiving income from private business, farming or the professions. The number of farmers and self-employed professional workers occurring in the sample is small and the estimates of average income from these sources should not be regarded as reliable, more especially as the dispersion of these groups is very large. On the other hand there were in the sample a fair number of people engaged in some form of business. The average income from this source (only £355) seems rather low at first sight. But it must be remembered that a large number of quite small incomes come under this heading. In our sample half the business incomes were of less than £200 : some of these are the profits of letting rooms, others are the profits of people working on their own account and yet others are the profits of small shopkeepers. Less than 10 per cent of business incomes were as much as £1,000 or more.

Table 16 shows the distribution of income received from rent, interest and dividends. It will be observed that, although 30 per cent of income units receive income from this source, the great majority of these receive only small amounts. In fact, these figures probably underestimate the proportion of income units who receive *some* income from this source, because everyone who has money in the post office, or in a trustee savings bank, and all members of co-operative societies who receive ' dividends ' should be recorded here; there is little doubt that small items of this sort were overlooked by some people, despite our diligent efforts to prompt them. The 5 per cent of income units who reported appreciable amounts of investment income, *i.e.*, £50 or more, (excluding the Schedule A income of owner-occupiers) are concentrated mainly in three occupational groups—the self-employed, managers and the retired. As one might expect the proportion of income units with significant amounts of investment income increases with age, and the average amount received from this source increases likewise. It will be shown below that there is reason to believe that too little investment income was reported in the survey, and the figures in Table 16 must therefore be treated with caution, especially the averages and standard deviations.

The distribution of government transfers for various types of income unit is given in Table 17. A wide variety of government transfer payments are included under this heading : the principal ones are health and unemployment benefits, old age and widows' pensions, war disability pensions, national assistance, and family allowances. They tend to fall into two main groups : (1) supplementary payments to people who have other more important sources of income, and (2) payments which are meant to be the main support of the people receiving them. Family allowances clearly fall into the first group; and so do most health benefits and short-term unemployment benefits. Old age pensions, widows' pensions and some disability pensions are generally of the latter type. These differences can be seen in the figures of Table 17. The supplementary benefits are mostly of less than £60, while payments of £60 or more are mostly for ' main support '. These larger payments occur most frequently amongst the retired and unoccupied, males of 65 and over and females of 45 and over. The effect of family allowances can be clearly seen in the final section of the table.

TABLE 15

Profits from Private Business, Farming and Professions

Type of income unit	*Per cent with income from each source*			*Number in sample*
	Business	*Farming*	*Professions*	
All income units	8	1	1	2,598
Age of head				
18–24	—	—	*	296
25–34	5	1	2	456
35–44	8	1	3	492
45–54	13	1	3	499
55–64	5	2	1	382
65 and over	10	1	*	473
Sex of head				
Male	9	1	2	1,918
Female	8	—	1	680
Size of town				
Conurbation	8	*	1	964
Other urban	9	1	1	1,167
Rural	8	5	2	467
For those with income from the source :				
Mean ... ... £	355	1,567	711	—
S.D. ... ... £	428	3,221	1,463	—
Number in sample	271	33	53	—

TABLE 16

Rent, Interest and Dividends received by Income Units of Various Types
(percentage distributions)

Type of income unit	*Rent, interest and dividends*					*All in group*		*Those with this income*	
	Nil	*£1–4*	*£5–9*	*£10–49*	*£50 & over*	*Per cent*	*No. in sample*	*Mean £*	*S.D. £*
All income units ...	70	14	5	6	5	100	2,598	57	249
Occupation of head									
Self-employed ...	61	9	5	11	14	100	230	115	396
Managers, etc. ...	54	14	4	10	18	100	259	192	583
Clerical and sales ...	83	8	3	5	1	100	330	22	87
Skilled manual ...	71	16	8	4	1	100	807	10	33
Unskilled manual ...	73	16	6	4	1	100	388	8	42
Retired, etc. ...	65	13	4	7	11	100	571	96	223
Age of head									
18–24...	96	3	*	*	1	100	296	20	39
25–34...	72	18	6	2	2	100	456	27	189
35–44...	68	18	7	4	3	100	492	29	110
45–54...	64	12	8	9	7	100	499	65	326
55–64...	61	16	6	10	7	100	382	69	311
65 and over	63	13	5	8	11	100	473	91	228
Sex of head									
Male	67	15	7	6	5	100	1,918	56	266
Female	78	9	3	5	5	100	680	62	145

TABLE 17

Government Transfers Received by Income Units of Various Types
(percentage distributions)

Type of income unit	Government transfers					All in group		Those with transfer income	
	Nil	£1–19	£20–59	£60–99	£100 and over	Per ceni	No. in sample	Mean £	S.D. £
All income units ...	57	13	10	11	9	100	2,598	42	48
Occupation of head									
Self-employed ...	74	12	8	4	2	100	230	38	36
Managers, etc. ...	68	21	10	*	1	100	259	25	26
Clerical and sales ...	78	13	7	1	1	100	330	28	29
Skilled manual ...	65	18	14	2	1	100	807	28	25
Unskilled manual ...	62	15	13	7	3	100	388	41	42
Retired, etc. ...	20	5	36	18	21	100	571	95	41
Male heads by ages									
18–44	61	22	15	1	1	100	993	29	34
45–64	69	13	10	5	3	100	653	43	43
65 and over ...	32	—	20	11	37	100	272	107	35
All males	59	16	12	6	7	100	1,918	51	49
Female heads by ages									
18–44	80	11	4	2	3	100	251	46	57
45–64	43	5	15	27	10	100	228	72	45
65 and over ...	16	—	3	64	17	100	201	84	21
All females ...	50	6	7	28	9	100	680	73	41
Number of persons									
One	59	5	5	25	6	100	987	70	34
Two	70	4	5	5	16	100	731	94	56
Three	80	7	8	2	3	100	412	67	40
Four	16	72	8	2	2	100	297	20	26
Five	6	20	70	1	3	100	115	31	38
Six or more ...	2	4	75	12	7	100	56	51	44

Private transfers were reported by 3 per cent of income units and their average amount was £130. They are much more frequently received by income units whose heads are females (11 per cent) than by income units whose heads are males (1 per cent). The income included under this heading was limited to money received from relations or friends living *outside* the household, since payments by people living *in* the household were assumed to be made in return for board and lodging. Typical examples of private transfers are : allowances by men in the forces to their dependants, alimony and separation payments, and allowances made by sons to mothers or parents to children.

Proportions of Income from Different Sources

Having looked at the distributions of the various sources of income taken separately, we shall now bring together the aggregate amounts from each source and compare them with total gross income. By such a comparison it is possible to indicate the sources from which income units of various types derive their incomes, and in what proportions. The results of this analysis are presented in Table 18. For all income units combined we find that about three-quarters of gross income comes from employment, 13 per

TABLE 18

Components of Total Personal Income

Type of income unit	*Per cent of total income of each group derived from*					*Total*	*Mean total income of group*
	Employment	*Profits of business and professions*	*Rent, interest, dividends*	*Govern- ment fers trans-*	*Private transfers*		£
All income units ...	76	13	4	6	1	100	424
Total income ...							
Under £100 ...	10	2	4	83	1	100	77
£100–199	49	4	5	38	4	100	148
£200–299	79	5	3	9	4	100	253
£300–399	90	4	1	4	1	100	348
£400–499	90	5	1	3	1	100	446
£500–599	89	7	2	2	*	100	554
£600–699	87	9	2	2	*	100	644
£700–799	82	15	2	1	*	100	747
£800–999	82	12	5	1	*	100	870
£1,000–1,499 ...	48	42	9	1	*	100	1,171
£1,500 and over ...	44	43	13	*	*	100	3,064
Occupation of head							
Self-employed ...	8	86	5	1	*	100	927
Managers, etc. ...	88	3	8	1	*	100	1,026
Clerical and sales...	95	1	1	2	1	100	393
Skilled manual ...	96	1	1	2	*	100	430
Unskilled manual	93	*	1	5	1	100	333
Retired, etc. ...	29	5	18	42	6	100	180
Age of head							
18–24	97	*	1	1	1	100	260
25–34	87	8	2	2	1	100	461
35–44	83	11	2	3	1	100	511
45–54	70	22	4	3	1	100	593
55–64	72	15	6	6	1	100	432
65 and over ...	40	12	15	32	1	100	221

cent from profits of business, farming and the professions, 4 per cent from rent, interest and dividends, 6 per cent from government transfers and 1 per cent from private transfers. The proportion of rent, interest and dividends is almost certainly too low—it is about about half as much as one would expect. The principal cause of its being so low is that there was an absolute shortage in reported investment income, but as a further contributory cause the amount of income reported from employment and profits was rather higher than might have been expected.[1] It may be that some income that is strictly speaking investment income, *e.g.*, dividends on shares in private companies, was reported as if it were a salary or the profits of a private business. It may also be that a considerable amount of investment income is in the hands of people living in hotels and boarding-houses, who were not covered by the survey. But the deficiency is too great to be accounted for in these ways and there seems little doubt that the survey failed to obtain full information on income from this source.

Even with this qualification in mind it is of some interest to observe the variation in the proportions of income derived from different sources as between one group of income units and another. Income from employment, for example, represents only a very small proportion of the total income of those whose total income is less than £100 ; the proportion increases rapidly as total income rises, reaching a maximum of 90 per cent when total income is between £300 and £499. Thereafter it declines, slowly at first, but more rapidly after total income reaches a level of £1,000. Profits from business (including farming) and the professions are of comparatively little importance to those whose total incomes are less than £700; but above that point they become of increasing importance, reaching over 40 per cent of total income amongst those with £1,000 and over. Rent, interest and dividends are more important to both the poor and the rich than to those in the middle-income groups. Government transfers represent four-fifths of the income of those with less than £100 in total and nearly two-fifths of the income of those with £100–200; but for those with higher incomes they are, as they should be, of little importance. Private transfers represent an important source of income only to people with less than £300 in total income. The analyses by occupation and age are also of interest. In the latter, for example, we observe how, as age increases, income from employment becomes a progressively smaller proportion of the total, while the other sources of income (except private transfers) are of increasing importance.

---

[1] See Appendix 2 for a detailed discussion of this matter.

TAXATION OF INCOME

Since it is usually desirable to relate personal saving to net income (after tax) rather than to gross income, arrangements were made to work out, for each income unit in the sample, the amount of tax payable. This method of discovering net income, though laborious, was thought to be better than the alternative of asking people directly how much tax they paid. The amount of information at our disposal was such that the tax liability could be computed fairly accurately, although no allowance could be made for dependent relative relief, or for tool and clothing allowances, and it was sometimes necessary to guess the amount of superannuation relief (because arrangements differ for different schemes). As a result of these calculations we obtained data on the incidence of direct taxes. The taxes included are income tax, surtax and national insurance contributions,[1] and the figures refer to the amount of tax *payable*, not to the amount actually *paid*.

It was found that 83 per cent of income units were liable for some form of direct tax on income; 64 per cent were liable for income tax (and a few of these were liable for surtax as well); the remaining 19 per cent were liable for national insurance only. An analysis of the proportion of income units liable for taxation in 1951–52 is given in Table 19. The operation of various reliefs and allowances has the effect of excluding from liability to income tax a large proportion of incomes under £200, *i.e.*, most of the old and retired people

---

[1] That is, contributions payable by the person insured. Contributions payable by employers are not treated as part of gross personal income.

TABLE 19

Liability for Income Tax and National Insurance Contributions

Type of income unit	*Per cent in each group liable to pay*		
	Income tax	*Either income tax or national insurance*	*National insurance only*
All income units	64	83	19
Total income			
Under £100	—	9	9
£100—199	31	51	20
£200—299	70	89	19
£300—399	66	97	31
£400—499	73	100	27
£500—599	90	100	10
£600—699	92	100	8
£700—799	98	100	2
£800—999	99	100	1
£1,000 and over	100	100	—
Occupation of head			
Self-employed	77	98	21
Managers and technical	95	99	4
Clerical and sales	81	99	18
Skilled manual	77	99	22
Unskilled manual	65	96	31
Retired and unoccupied	19	25	6
Age of head			
18–24	64	97	33
25–34	82	97	15
35–44	70	96	26
45–54	71	93	22
55–64	70	82	12
65 and over	30	31	1

and some of the less well paid members of the active population. The latter, however, are obliged to pay national insurance contributions : a considerable proportion of the lower income groups pay national insurance but no income tax and, since national insurance is a poll tax, the burden falls heavily on some of them. The proportion of manual workers who were liable for income tax in 1951–52 is remarkably high : it amounts to as much as 65 per cent for the unskilled manual worker group and 77 per cent for the skilled manual workers. The 1952 Budget will have had the effect of excluding some of these but, so long as the exemption limit remains at £135, records will still have to be kept for them.

Distributions of tax liability for income units of various types are given in Table 20. The amount of tax payable rises with income, rather slowly at first, but quite rapidly after about the £500 level. The self-employed and managers, whose gross incomes average about £1,000, pay much higher average amounts of tax than other occupations. Three-quarters of the retired and unoccupied pay no tax; but those who come within the tax range pay more on the average than, for example, manual workers. Retired and unoccupied people have, of course, fewer dependants and some of them have large incomes that incur heavy rates of tax : 2 per cent of them are paying £200 or more.

TABLE 20

Tax Liability of Income Units of Various Types
(percentage distributions)

Type of unit	*Tax liability*						*All in group*		*Those liable for tax*	
	Nil	*£1–19*	*£20–£49*	*£50–£99*	*£100–£199*	*£200 and over*	*Per cent*	*No. in sample*	*Mean* *£*	*S.D.* *£*
All income units	17	33	29	12	5	4	100	2,598	67	366
Gross income										
Under £100	91	9	—	—	—	—	100	201	1	10
£100—199 ...	49	50	1	—	—	—	100	407	12	4
£200—299 ...	11	44	45	—	—	—	100	344	20	11
£300—399 ...	3	50	38	9	—	—	100	469	25	17
£400—499 ...	*	37	43	20	—	—	100	385	31	21
£500—599 ...	*	16	54	25	5	—	100	251	42	27
£600—699 ..	*	8	34	45	13	*	100	154	58	38
£700—799 ...	*	2	11	48	38	1	100	95	88	43
£800—999 ...	*	—	6	18	62	14	100	97	135	56
£1,000—1,499	—	—	1	1	21	77	100	101	252	86
£1,500—1,999	—	—	—	—	—	100	100	41	473	88
£2,000 & over	—	—	—	—	—	100	100	53	1,946	2,795
Occupation of head										
Self-employ'd	2	27	18	15	12	26	100	230	263	1,055
Managers,etc.	1	6	13	25	29	26	100	259	247	750
Clerical and sales ...	1	36	43	14	4	2	100	330	39	46
Skilled manual ...	1	38	40	17	4	*	100	807	34	30
Unskilled manual ...	4	52	36	7	1	—	100	388	24	20
Retired, etc.	75	18	4	1	*	2	100	571	49	135
Age of head										
18–24 ...	3	46	39	10	2	*	100	296	29	27
25–34 ...	3	38	35	16	7	1	100	456	45	122
35–44 ...	4	44	29	13	6	4	100	492	50	128
45–54 ...	7	31	31	17	6	8	100	499	123	740
55–64 ...	18	27	33	11	5	6	100	382	79	244
65 and over	69	15	9	3	1	3	100	473	68	170
Sex of head ...										
Male ...	10	32	32	15	6	5	100	1,918	75	403
Female ...	40	35	19	4	1	1	100	680	28	45
Number of persons										
One	30	27	28	11	3	1	100	987	40	63
Two ...	18	18	35	16	6	7	100	731	111	620
Three ...	4	41	29	11	10	5	100	412	59	146
Four ...	3	56	23	11	2	5	100	297	60	249
Five ...	4	61	25	2	2	6	100	115	75	533
Six or more	2	80	16	—	1	1	100	56	18	25

Taxation is very closely correlated with income; and this explains why average tax liability increases with age up to the 45–54 group and then declines. Another factor, of less importance, is the number of dependants for whom relief can be claimed; its influence can be seen in the last section of the table, in which the tax liability of income units of various sizes is set forth.

It is of some interest to consider the degree of severity of direct taxation on people of different types. As a measure of this we can take the percentage of gross income payable in tax, though we must not forget that people with smaller incomes can less well afford even the same proportionate rate of tax than people with larger incomes. In Table 21 we give the distribution of tax liability as a percentage of gross income for income units whose heads are of various occupational types. The average proportion of tax to gross income for all income units is 13 per cent (£55 tax out of £424 gross income). This is equivalent to just over 2s. 6d. in the £. If we take 2s. in the £, or 10 per cent, as a critical level we find that about 40 per cent of the self-employed pay less than this, 28 per cent of managers, nearly 60 per cent of clerical and sales workers, nearly 70 per cent of skilled manual workers, nearly 80 per cent of unskilled manual workers, and over 90 per cent of the retired and unoccupied. A tax rate of 20 per cent or more is paid by very few people outside the self-employed and manager groups: 27 per cent of the former and 28 per cent of the latter pay at this rate. In addition, just over 2 per cent of the retired and unoccupied pay taxes of 20 per cent or more.

TABLE 21

Tax Liability as a Percentage of Gross Income, by Occupations
(percentage distribution of income units)

Tax as a per cent of gross income	*Occupation of head*						*All income units*
	Self-employed	*Managers, etc.*	*Clerical sales*	*Skilled manual*	*Unskilled manual*	*Retired etc.*	
Nil	2	1	1	1	4	75	17
0.1— 4.9	17	7	16	36	36	11	25
5.0— 9.9	20	20	42	32	38	8	28
10.0—14.9	23	19	33	23	20	3	19
15.0—19.9	11	25	6	7	1	1	6
20.0—24.9	9	13	2	1	1	*	2
25.0—29.9	11	9	*	*	—	1	2
30.0—39.9	4	4	*	—	—	1	1
40.0 and over ...	3	2	—	—	—	*	*
Total	100	100	100	100	100	100	100

Average and Marginal Tax Rates

By relating average tax liability per income unit to average gross income per income unit at various levels of income it is possible to make a rough estimate of the effective average and marginal tax rates in operation in 1951–52. Such tax rates cannot be deduced from the published tables of tax liability for specimen incomes unless it is known in what proportions these specimen incomes should be combined; and such information is not usually available in adequate detail.[1] Table 22 gives the results of these calculations; and they are illustrated, for those with up to £2,000 gross income, in Chart 9. It will be seen that the average tax rate rises steeply from the lowest level of income up to about £250; it then levels off at about 7 per cent until the figure

---

[1] But a calculation can be made for certain broad groups of incomes from the *Reports* of the Inland Revenue.

TABLE 22

Average and Marginal Tax Rates at Different Levels of Gross Income

Gross income of income unit	*Mean income* £	*Mean tax liability* £	*Average tax rate (per cent)*	*Marginal tax rate*[1] *(per cent)*
Under £100	77	1	1.3	—
£100—199	149	6	4.0	8.4
£200—299	253	18	7.1	11.5
£300—399	348	24	6.9	6.3
£400—499	446	31	7.0	7.1
£500—599	554	42	7.6	10.2
£600—699	644	58	9.0	17.8
£700—799	747	88	11.8	29.2
£800—999	870	134	15.4	37.3
£1,000—1,499 ...	1,171	252	21.5	39.2
£1,500—1,999 ...	1,727	473	27.4	39.8
£2,000 and over ...	4,187	1,946	46.5	60.0
All	424	55	13.0	—

[1] These 'marginal' tax rates are somewhat crude approximations to the true marginal rates. They were obtained by relating the change in mean income of each income group to the consequential change in mean tax liability of the group. The figure shown opposite each group can be taken as applying approximately to the level of income that lies midway between the mean income of that group and the mean income of the preceding group.

of about £500 is reached; from £500 to £800 it climbs steeply again; and from that point onwards it rises at a diminishing rate. The changes in the slope of the average tax line are reflected in the slope of the marginal tax line. Marginal tax rate actually reaches a temporary peak at about £200 (this reflects the incidence of national insurance on the lowest incomes); from that point it falls back to near 7 per cent again until an income level of £400 is reached. It then rises with increasing steepness until about £700 and flattens out almost completely after £800. (It would, of course, begin to rise again from the point at which surtax payments start to take effect, *i.e.*, from £2,000 upwards). The steep rise in marginal rates between £500 and £800 gross income is very striking and it seems that the 1952 Budget was designed to smooth it off.

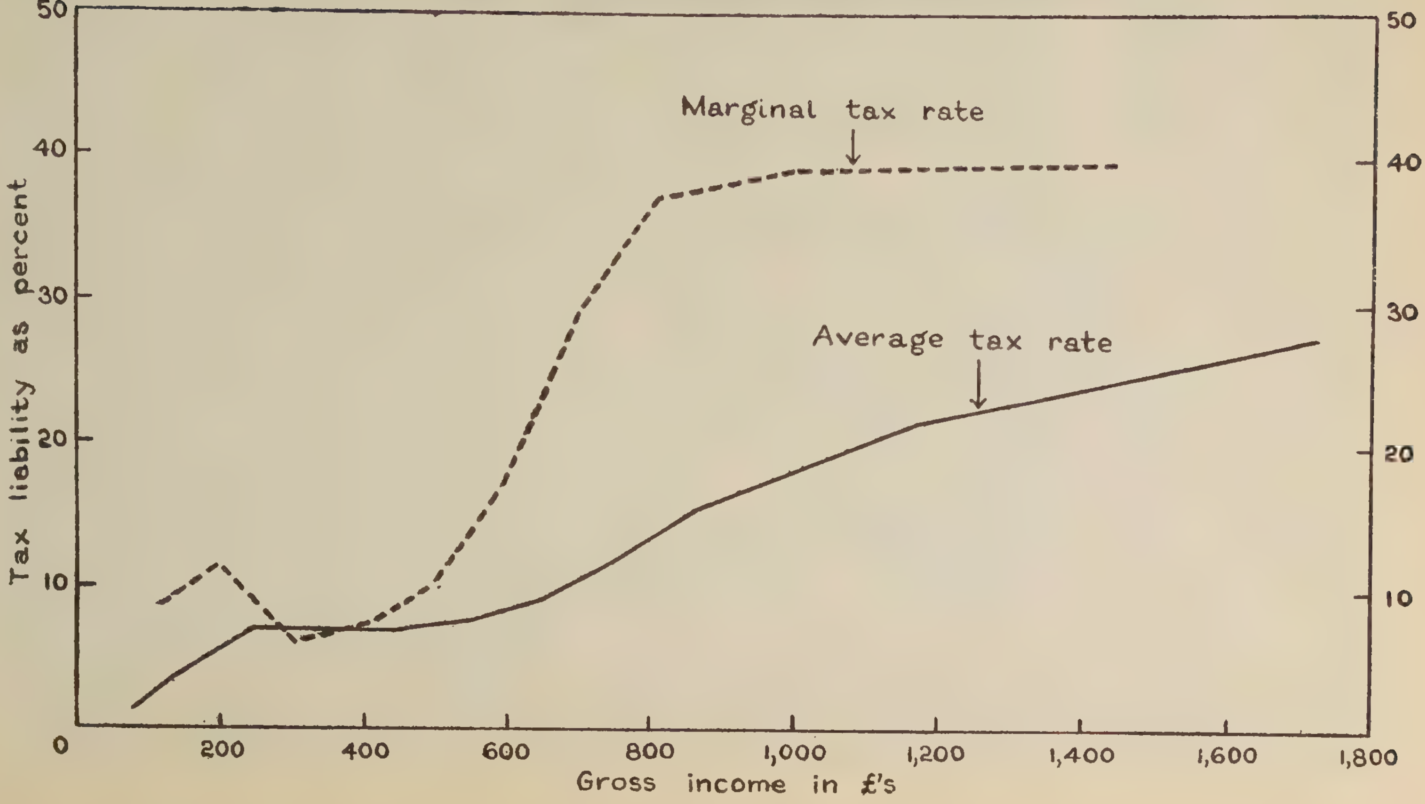
The progressive effect of the direct tax system is illustrated in Table 23

TABLE 23

Gross Income and Direct Tax Liability of Income Tenths

Tenths of income units after ranking by gross income	*Per cent of total income taken by each tenth* %	*Percentage of total direct tax payable by each tenth* %
Top tenth	30	62
2nd tenth ...	14	10
3rd tenth	12	7
4th tenth	10	5
5th tenth	9	4½
6th tenth	8	4½
7th tenth	7	4
8th tenth	5	2
9th tenth	3	1
Bottom tenth ...	2	*

CHART 9 Average and Marginal Tax Rates at Various Levels of Gross Income



where the proportion of gross income received by each tenth of income units, ranked according to their gross income, is compared with its proportion of total direct tax liability. Thus the top tenth of income units, who receive 30 per cent of gross income, pay 62 per cent of direct taxes; the second tenth receive 14 per cent of gross income and pay 10 per cent of taxes; and so on. The proportion of the total tax bill paid by all tenths except the top one is less than their share in total income, *i.e.*, all except the top tenth pay less than the average rate of tax. But it must be remembered that direct taxes represent only about half the total taxes paid by persons; and indirect taxes bear much more heavily on the lower income groups.

A final piece of analysis that was carried out with the help of these data was to estimate the marginal rate of tax applicable to manual workers as a group and non-manual workers as a group. The sort of question it is desired to answer is : Supposing an extra £100 million of incomes were distributed in the form of wages to manual workers, how much of that would become disposable income, after deduction of direct taxes ? And similarly for the incomes of salaried workers and the self-employed. The answer depends for each group on (1) the marginal rates of tax at each level of income in that group, (2) the existing income distribution in the group, and (3) the way in which the extra income is to be distributed. Evidence on (1) and (2) was obtained from the survey. The answer to (3) depends on what particular assumption one chooses to make. Two possible cases have been considered : (*a*) the extra income is distributed *equally per capita*, (*b*) the extra income is distributed in *equal proportion* to existing incomes. The results are summarised in the following table :—

	Manual workers	*Salaried and self-employed*
Average rate of tax in 1951–52	7.5%	21%
Marginal group rate :		
(*a*) When extra income distributed equally *per capita* ...	7.5%	18%
(*b*) When extra income distributed in proportion to existing income	9%	32%

The figures, though only approximate, provide a clear enough answer to the problem. Under the conditions existing in 1951–52, both with respect to income distribution and with respect to tax rates, an additional £100 million paid out in wages would be likely to result in £91–92 million extra disposable income in the hands of manual workers, whilst a similar sum shared out amongst salaried workers and the self-employed would result in extra disposable income of about £82 million, if every salaried worker and self-employed person was given an exactly equal amount, or of £68 million if each member of the group had an equal percentage rise in income.[1] From the tax collector's point of view a rise in salaries and profits is clearly to be preferred to a rise in wages.

---

[1] It may seem strange that the marginal group rate for non-manual workers is in one instance less than their average rate. This can easily be explained, however, if we consider the practical implications of the postulated method of distributing the extra income. If an equal amount of extra income is given to each non-manual worker the marginal rate for the whole group is heavily weighted by the large number of low-income *people* in this group, whose individual marginal rates are low. The average rate, on the other hand, is weighted by each person's *income* and is therefore much influenced by the high average rates paid by the fairly small proportion of people whose incomes are in the surtax range.

THE DISTRIBUTION OF NET INCOME

The tax liability of each income unit was subtracted from its gross income: the remainder—called net, or disposable, income—is the effective income at the disposal of each person, out of which he may choose to spend or save according to his means and his desires. The percentage distribution of net income per income unit is given in Table 24. It is evident that net income is much less unequally distributed than gross income: only 2½ per cent of income units have a net income of £1,000 or more; average net income per income unit is £369 and its standard deviation is £292 (compared with a standard deviation of £584 for gross income). The reduction in inequality can be illustrated by means of Lorenz curves, as in Chart 10. The nearer a curve is to the diagonal on this chart the more equally distributed is the

TABLE 24
Net Income of Income Units
(percentage distribution)

Net income	*Per cent of income units* %	*Per cent of total net income* %	*Cumulative per cent of income units* %	*Cumulative per cent of total net income* %
Under £100	8.1	1.1	100.0	100.0
£100—199	17.6	7.2	91.9	98.9
£200—299	18.3	12.5	74.3	91.7
£300—399	20.9	19.9	56.0	79.2
£400—499	15.2	18.7	35.1	59.3
£500—599	8.2	12.2	19.9	40.6
£600—699	5.4	9.4	11.7	28.4
£700—799	2.5	5.2	6.3	19.0
£800—999	1.4	3.4	3.8	13.8
£1,000—1,499 ...	1.5	5.0	2.4	10.4
£1,500—1,999 ...	0.4	1.9	0.9	5.4
£2,000 and over ...	0.5	3.5	0.5	3.5
Total	100.0	100.0	100.0	100.0

TABLE 25
Income Units Ranked by Tenths According to Net Income[1]

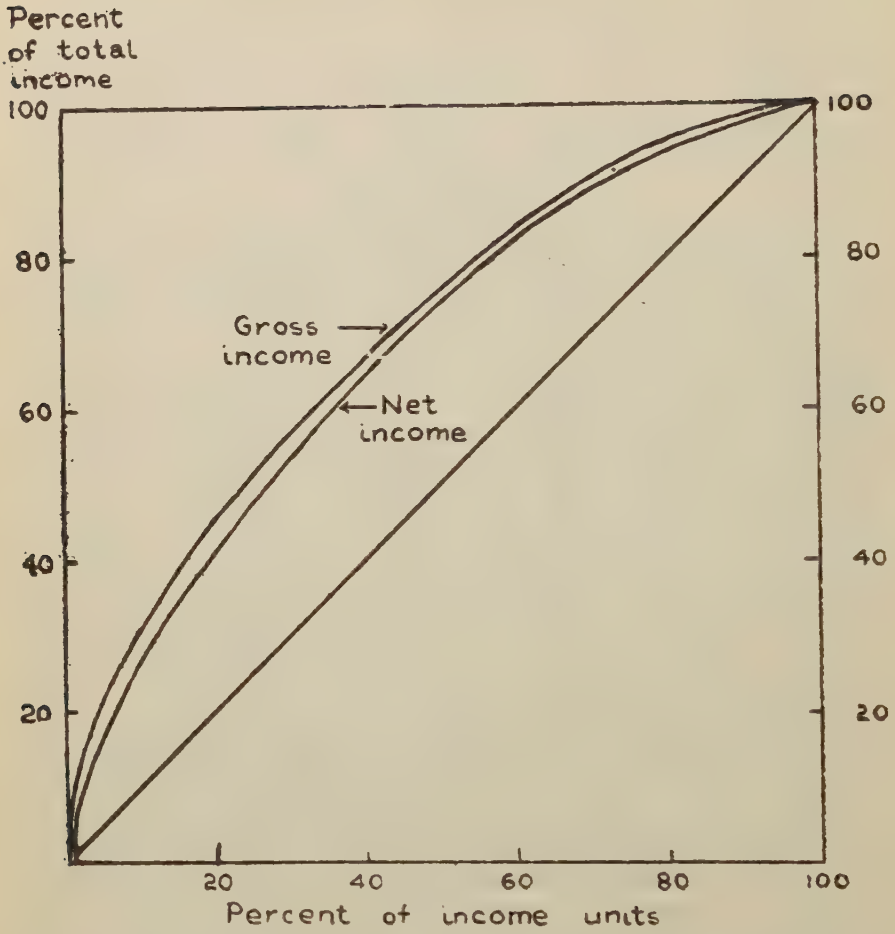
Tenths of income units after ranking by net income	*Percent of total net income taken by each tenth* %	*Cumulative per cent of total net income* %	*Lowest net income of each tenth* £
Top tenth	26	26	620
2nd tenth	14	40	500
3rd tenth	13	53	430
4th tenth	11	64	380
5th tenth	10	74	330
6th tenth	8	82	280
7th tenth	7	89	230
8th tenth	5	94	170
9th tenth	4	98	110
Bottom tenth	2	100	—

---

[1] These figures were obtained by graphic interpolation.

CHART 10

Lorenz Curves of Gross and Net Income



income to which it relates. The figures in Table 25 correspond to the Lorenz curve for net income. When they are compared with the similar figures for gross income (Table 10) it is evident that the principal effect of direct taxation is to reduce quite appreciably the proportion of total income taken by the top tenth of incomes (the percentage falls from 30 to 26) and to increase slightly the proportions taken by several of the lower income groups.

The distribution of net income per income unit is illustrated in Chart 11, from which it will be observed that net income, unlike gross income, has only one mode. The compression of net incomes to the lower end of the income scale has the effect of increasing very considerably the proportion of net incomes in the £200–299 group and so filling the trough which exists at this point in the distribution of gross incomes.

Table 26 summarises the information on average gross income per income unit, average tax liability and the resulting average net income per income unit. In general the effect of direct taxation is to take most from those who can most afford it, with the result that net incomes are much closer to one another than gross incomes. The fourth column of Table 26 gives the average number of persons per income unit in each group. When this is divided into net income per income unit we arrive at net income *per person* for each group of income units. For this calculation each member of the income unit—adult or child, male or female—is counted as of equal weight, and the resulting figures provide only a broad indication of the comparative standard of living available to each group. It is an interesting fact that, on the whole, larger net incomes are associated with larger numbers of persons

CHART 11

Distribution of Income Units According to their Net Income

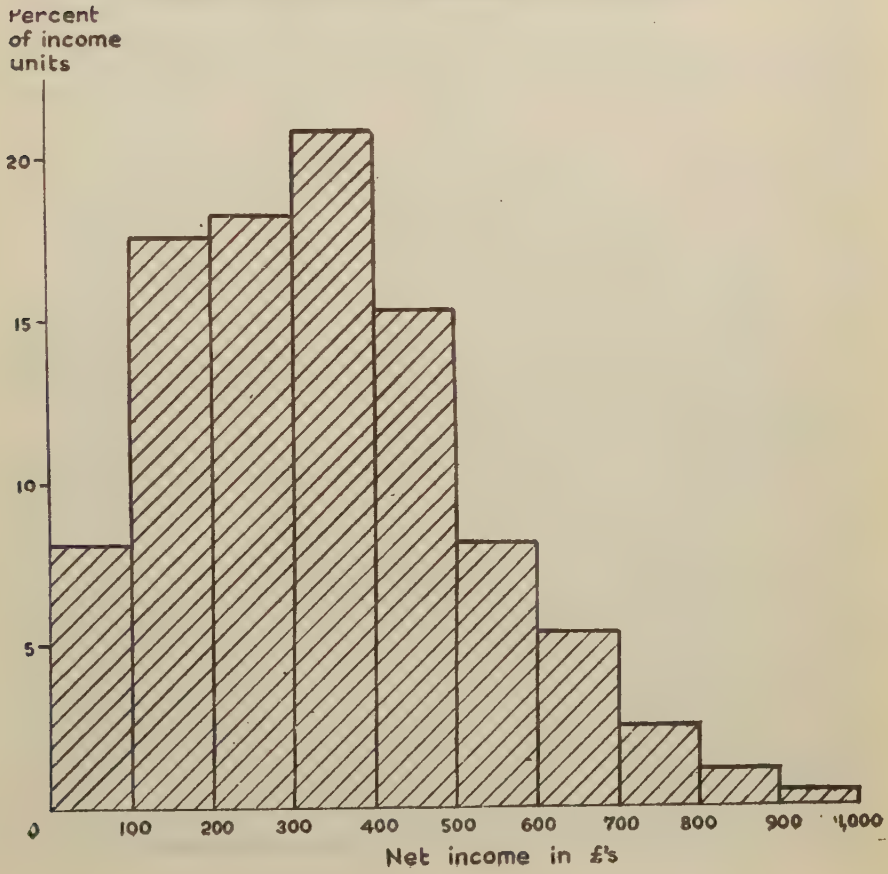


TABLE 26

Gross and Net Income per Income Unit and Net Income per Person
(average per income unit in each group)

Type of income unit	*Gross income* £	*Tax liability* £	*Net income* £	*Number of persons* No.	*Net income per person* £
All income units	424	55	369	2.28	162
Gross income					
Under £200	125	4	121	1.26	96
£200—399	309	22	287	2.14	134
£400—599	482	35	447	2.97	151
£600—999	729	86	643	3.13	205
£1,000 and over	1,987	692	1,295	2.77	468
Occupation of head					
Self-employed	927	257	670	2.60	258
Managers and technical ...	1,026	246	780	2.85	274
Clerical and sales	393	39	354	1.97	180
Skilled manual	430	34	396	2.65	149
Unskilled manual	333	23	310	2.35	132
Retired and unoccupied ...	180	12	168	1.50	112
Age of head					
18–24...	260	28	232	1.15	200
25–34...	461	44	417	2.72	153
35–44...	511	48	463	3.28	141
45–54...	593	115	478	2.68	178
55–64...	432	65	367	1.87	196
65 and over	221	21	200	1.47	137
Sex of head					
Male	498	68	430	2.64	164
Female	197	17	180	1.19	153
Number of persons					
One	232	28	204	1	204
Two	517	91	426	2	213
Three...	533	57	476	3	159
Four	570	58	512	4	128
Five	599	72	527	5	105
Six or more	519	18	501	6.52	77

in the income unit. Thus income units with net incomes of less than £200 have on the average 1.26 persons to support, while people with higher incomes have on the average 2–3 people to support.

Manual workers, it is true, have about the same number of persons per income unit as the self-employed and managers, whose incomes are much higher on the average; but the retired and unoccupied and clerical and sales workers have less persons to support. The variation in the number of persons to be supported reduces very sharply the inequalities between age groups. Those under 25, for example, who have an average income per income unit of £232, which is near the bottom of the scale for income units, actually have the highest net income *per person*. The considerable drop in net income per person for those aged 25–34 is the result of the rapid increase in the average number of people in the income unit; and even in the next age group the increase in average net income is not sufficient to offset the growing size of families. Only in the age groups from 45 to 64 do matters improve: at this stage the number of dependants is falling more rapidly than average net income per income unit. Finally, those aged 65 and over have comparatively few dependants and their average net income per person, although lowest of all, is not much below that of the middle age groups.

The effect of taxation and of the number of persons per income unit is strikingly different for males and females. Income units with male heads have an average gross income of £498, out of which they pay £68 in tax. The remaining £430 has to support on the average 2.64 persons, with the consequence that net income per person is £164. Income units with female heads, on the other hand, start with only £197 average gross income; they pay £17 in tax and, since they support only 1.19 persons on the average, they have a net income per person of £153, not very different from the final figure for the males.

When income units are grouped according to the number of persons they contain it appears that, in terms of net income per person, single people and married couples without children (most of the two-person income units are married couples) are best off. With the appearance of children, despite family allowances and income tax reliefs, the average net income per person declines. For those with three children life is becoming difficult: and for larger families the average net income per person is very low.

Averages, of course, cannot tell the full story. Table 27 adds to the picture by presenting frequency distributions. It is difficult to lay down any

TABLE 27

Net Income per Person for Income Units of Various Types
(percentage distributions)

Type of income unit	*Net income per person*						*All in group*		
	Under £50	*£50 –99*	*£100 –199*	*£200 –299*	*£300 –399*	*£400 and over*	*Per cent*	*No. in sample*	*Mean £*
All income units ...	1	23	43	21	7	5	100	2,598	162
Occupation of head									
Self-employed ...	3	9	33	24	13	18	100	230	258
Managers, etc. ...	*	3	29	31	12	25	100	259	274
Clerical sand sales ...	1	9	45	30	13	2	100	330	180
Skilled manual ...	*	14	51	24	9	2	100	807	149
Unskilled manual ...	1	24	47	24	3	1	100	388	132
Retired, etc. ...	3	53	34	7	1	2	100	571	112
Age of head									
18–24...	1	8	43	35	11	2	100	296	200
25–34...	1	18	42	26	9	4	100	456	153
35–44...	2	22	49	17	7	3	100	492	141
45–54	*	20	42	24	7	7	100	499	178
55–64	2	17	46	21	7	7	100	382	196
65 and over	1	46	37	11	3	2	100	473	137
Sex of head									
Male	1	23	43	22	7	4	100	1,918	164
Female	1	30	41	21	4	3	100	680	153
Number of persons									
One	*	21	33	29	11	6	100	987	204
Two	1	17	40	28	8	6	100	731	213
Three...	1	13	64	16	4	2	100	412	159
Four	1	33	59	3	2	2	100	297	128
Five	3	50	41	4	—	2	100	115	105
Six or more ...	11	71	17	1	—	—	100	56	77

simple criterion of poverty: but it is perhaps reasonable to say that people with a yearly net income of less than £50 per person are, with only a few exceptions, very poor; and it may also be thought that those whose yearly net income is less than £100 per person (*i.e.*, less than £2 a week) are likely to be having a difficult time, to say the least. If we test the figures in Table 27 by these criteria we can be gratified to discover that only 1 per cent of income units are in the first category (less than £50 per person). There are, however, rather a large proportion of such cases amongst large families and, although the sample of such families is small, it seems that large families are still a cause of poverty.

If we take the second criterion—net income per person of less than £100—we find many more people who are likely to be 'having a difficult time'. In the whole population about one income unit in four has less than this amount of income: they represent 12 per cent of the self-employed, 3 per cent of managers, 10 per cent of clerical and sales workers, 14 per cent of skilled manual workers, 25 per cent of unskilled manual workers and 56 per cent of the retired and unoccupied. The proportion of the under 25's with less than £100 net income per person is only 9 per cent but for all age groups between 25 and 64 it is about 20 per cent. Amongst those aged 65 and over nearly half are below this standard. The differences between males and females in this respect are not marked: 31 per cent of income units with female heads have less than £100 per person as against 24 per cent of those with male heads. When income units of different sizes are compared three-person income units are found to have the smallest proportion of people below this standard (14 per cent) whilst the one- and two-person income units have a slightly larger proportion (about 20 per cent). Amongst income units of larger sizes the proportion mounts rapidly: one-third of four-person income units, over half of five-person income units and four out of five of the largest families (those with four or more children) have less than £100 net income per person.

Distributions of Persons by Net Income

The above discussion of net income per person has been concerned with distributions of *income units*. It is also possible, and from some points of view more relevant, to consider the distribution of *persons*. This is equivalent to giving each income unit a weight according to the number of persons it contains; and since the larger the income unit the lower its income per person on the average, the distribution of persons reveals a greater proportion of *persons* with low incomes than there are of *income units* with low incomes. This effect can be seen in Table 28. The table contains four distributions: (1) a distribution of income units, (2) a distribution of persons, (3) a distribution of adults taken separately and (4) a distribution of dependent children taken separately. The last three distributions are constructed on the principle that each member of an income unit has an equal share in the total net income of the unit. It will be seen that the distribution of adults corresponds

TABLE 28

Net Income Per Person[1]

(percentage distributions)

Net income per person	*Percentage distribution of:*			
	Income units	*Persons*	*Adults*	*Dependent children*
Under £50	1.3	2.0	1.4	3.6
£50—99...	22.6	27.3	22.6	39.9
£100—149	26.0	30.5	28.1	36.8
£150—199	17.1	16.0	18.0	10.6
£200—249	13.2	10.3	12.5	4.3
£250—299	8.3	5.7	7.2	2.0
£300—399	7.1	5.0	6.3	1.5
£400—499	2.2	1.6	1.9	0.8
£500—749	1.5	1.1	1.4	0.3
£750 and over	0.7	0.5	0.6	0.2
Total	100.0	100.0	100.0	100.0

[1] The total net income of each income unit was divided by the number of persons in the income unit. Thus each member of the income unit is regarded as having the average net income appropriate to his income unit.

very closely with the distribution of income units; but persons as a whole are more concentrated at lower levels of net income. This is due to the heavy clustering of children in the lowest income groups: whereas 24 per cent of *income units* have less than £100 per person, the percentage of *persons* below this level is 29 and of *children* 44.

The distribution of persons according to their net income is illustrated in Chart 12, and cumulative frequencies are plotted against net income in Chart 13. The latter diagram clearly shows the disparity between the net income available to adults (including children already at work) and the amounts available for the support of children: it seems that on the average adults have 50 per cent more net income than children. The slope of the lines gives a rough measure of the inequality of distribution (the so-called 'Pareto Coefficient'): for dependent children the section from £100 upwards, which happens to be remarkably straight, has a slope of about —2.8, and all three lines are clearly steeper than those illustrating the distribution of gross income per income unit (compare Chart 3).

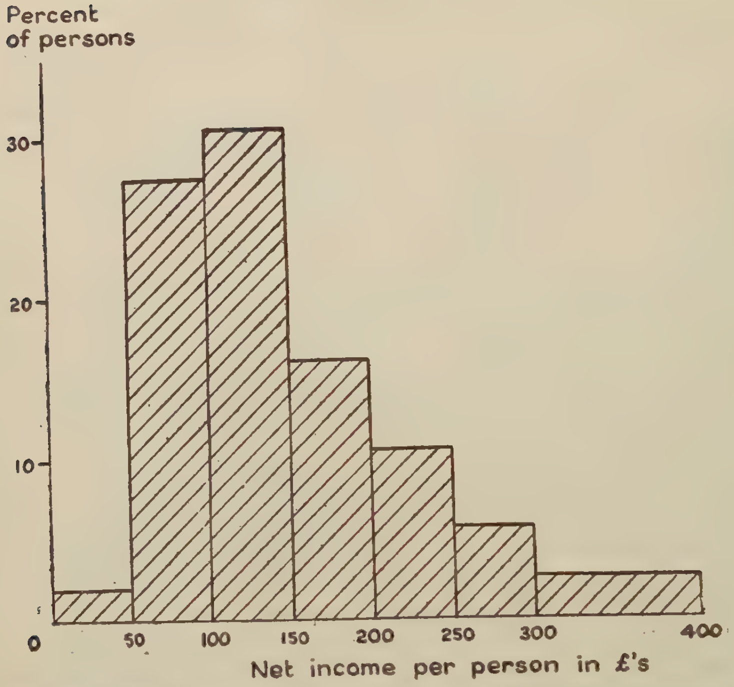
THE NET EFFECT OF DIRECT TAXES AND GOVERNMENT TRANSFERS

The government's fiscal policy impinges on almost every aspect of economic life; and it is difficult, if not impossible, to assess precisely its effect on different sections of the population. However, if the problem is limited to that of measuring the impact of *direct* taxes and transfers on disposable incomes, the answer can be given from our data.

In Table 29 we show, for each group of income units, the amount of cash payable to the government in tax and the amount of cash received from the government in transfers. From these figures we deduce the net receipt or payment for that group, *i.e.*, the net amount of income that comes from the

CHART 12

Distribution of Persons According to Net Income



NOTE.—Each person is assumed to have an equal share in the total net income of his or her income unit.

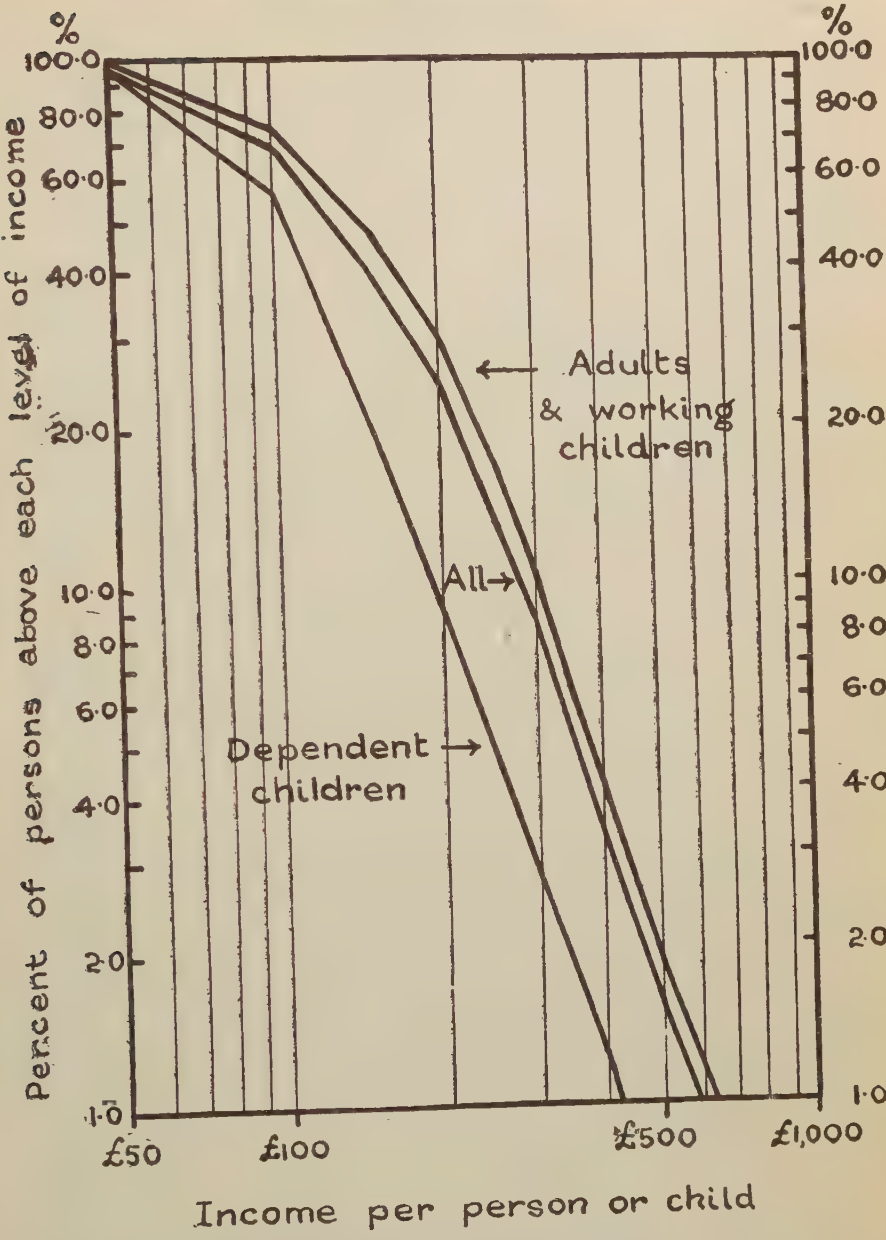
government or the net amount of income that goes to the government. The first three columns of the table give the average amounts per income unit for each group and the next three columns give the estimated total amount paid or received by income units of each type living in private households in Great Britain.

The average amount payable in direct tax by all income units is £55 and the average amount of transfers received is £24: the net payment by the average income unit is £31. Taxes are low for the low incomes and transfers are high. Transfers exceed taxes on the average for incomes up to about £250; above that level taxes exceed transfers. A net amount of about £300 million is paid out by the government to income units with incomes of less than £300: against this nearly £1,000 millions is paid in by people with incomes above this level. About half of this comes from people with gross incomes of £300—1,499 and the other half from those with incomes of £1,500 and over.

When income units are classified according to the occupation of the head it appears that all groups of the active population are on balance paying into the national exchequer while the retired and unoccupied are drawing out.

CHART 13

Net Incomes of Adults and Children



NOTE.—The percentage of adults, persons or children whose net income per person exceeds each level of income is plotted on a double-logarithmic scale.

TABLE 29

The Balance of Direct Taxes and Government Transfers for Income Units of Various Types

Type of income unit	*Average per income unit*			*Estimated total for each group*[1]		
	Taxes payable £	*Transfers received* £	*Net receipt (+) or payment (—)* £	*Taxes payable* £ *mill*	*Transfers received* £ *mill*	*Net receipt (+) or payment (—)* £ *mill*
All income units	55	24	—31	1,220	540	—680
Total income						
Under £100	1	64	+63	1	109	+108
£100—199	12	56	+44	21	200	+179
£200—299	20	24	+4	55	75	+ 20
£300—399	25	13	—12	111	58	— 53
£400—499	31	12	—19	108	43	— 65
£500—599	42	10	—32	91	21	— 70
£600—699	58	14	—44	69	16	— 53
£700—799	88	11	—77	60	8	— 52
£800—999	135	6	—129	87	4	— 83
£100—1,499	252	6	—246	128	3	—125
£1,500—1,999	473	13	—460	83	2	— 81
£2,000 and over	1,946	7	—1,939	406	1	—405
Occupation of head						
Self-employed	257	10	—247	362	14	—348
Managers, etc.	246	8	—238	340	11	—329
Clerical and sales	39	6	—33	103	16	— 87
Skilled manual	34	10	—24	271	80	—191
Unskilled manual	23	15	—8	86	58	— 28
Retired, etc.	12	77	+65	58	361	+303
Age of head						
18–24	28	3	—25	77	10	— 67
25–34	44	11	—33	178	45	—133
35–44	48	16	—32	198	64	—134
45–54	115	15	—100	477	63	—414
55–64	65	26	—39	208	82	—126
65 and over	21	72	+51	82	276	+194

---

[1] These estimates relate to the 22 million income units in private households in Great Britain.

There are big differences in the average net payments by different groups depending on their incomes: the self-employed and managers pay about £240 each on the average, clerical and sales workers £33, skilled manual workers £24 and unskilled manual workers £8.

The analysis by age shows that up to the age of 44 average transfers received increase at about the same rate as average taxes paid, and the net payment is almost constant. The 45–54 group, however, includes many of the large incomes and its average tax payment is accordingly very high. In the next group taxes fall again; and in the final group—those aged 65 and over—transfers exceed taxes by £51 per income unit.

H. F. LYDALL

APPENDICES

APPENDIX 1

OCCUPATIONAL DISTRIBUTION OF INCOME UNITS

Appendix Table 8 is an addendum to the appendix tables published in the previous paper. It shows what proportion of income units in particular income and age groups and of each sex are in different occupations. It appears that income units with an income of less than £200 are predominantly retired and unoccupied, those with £200 to about £700 are mainly manual workers and those with £700 and over are mainly self-employed and managers. Clerical and sales workers form a large proportion of the under 25's and a rapidly diminishing proportion of older age groups; the proportion of retired and unoccupied people changes in the opposite direction. Twenty-nine per cent of male heads of income units aged 65 and over are still at work whilst of female heads in this age group only 8 per cent are at work. Thirteen per cent of males aged 18 and over are retired and unoccupied but nearly half the single or widowed females aged 18 and over are in this category. Forty per cent of the single and widowed females who go out of work are employed in clerical and sales occupations.

Appendix Table 8
Occupation of Head of Income Unit
(*percentage distribution*)

Type of income unit	*Occupation of head*						*All*	*No. in sample*
	Self-employed	*Managers and technical*	*Clerical and sales*	*Skilled manual*	*Unskilled manual*	*Retired and unoccupied*		
All income units	6	6	12	37	17	22	100	2,598
Gross income								
Under £100 ...	1	*	3	3	6	87	100	201
£100—199 ...	3	—	12	12	16	57	100	407
£200—299 ...	4	1	15	30	27	23	100	344
£300—399 ...	4	1	13	48	28	6	100	469
£400—499 ...	5	3	12	62	16	2	100	385
£500—599 ...	7	8	16	55	12	2	100	251
£600—699 ...	9	15	9	53	11	3	100	154
£700—799 ...	14	26	15	38	5	2	100	95
£800—999 ...	14	42	11	27	3	3	100	97
£1,000—1,499	46	32	12	4	—	6	100	101
£1,500 and over	35	54	1	1	—	9	100	94
Age of head								
18–24	*	2	31	43	20	4	100	296
25–34	5	8	15	53	15	4	100	456
35–44	9	10	13	46	18	4	100	492
45–54	11	8	9	39	23	10	100	499
55–64	9	7	8	29	21	26	100	382
65 and over ...	4	1	1	8	6	80	100	473
Males—65 and over ...	6	1	1	13	8	71	100	270
Females—65 and over ...	2	—	1	1	4	92	100	203
Sex of head								
Male	8	7	9	46	17	13	100	1,918
Female ...	3	3	20	10	16	48	100	680

APPENDIX 2

COMPARISON OF SURVEY AND OFFICIAL ESTIMATES OF THE COMPONENTS OF PERSONAL INCOME

The survey estimates of total personal income can be compared with those provided by the Central Statistical Office in the national income blue book[1] and by the Inland Revenue in their *94th Report*.[2] The latest estimate available from the former source is for the calendar year 1951 and relates to the United Kingdom as a whole; the Inland Revenue figures are based on assessments of income for the financial year 1949—50; and the survey figures relate to the personal income of people in private households in Great Britain. For the purposes of comparison the two estimates from official sources have been adjusted approximately to correspond with the survey definition of personal income: it was not possible, however, to adjust for the main difference in coverage, *i.e.*, the exclusion from the survey of the institutional population, nor has any adjustment been made for Northern Ireland.

The adjustments made to the Inland Revenue figures were as follows:

Additions[3]

Incomes below £135.

Co-operative Society dividends on purchases.

Undeclared earnings of married women.[4]

Undeclared investment income.[4]

Increase in profits of individuals and firms between 1948 (approximately the year on which the 1949–50 assessments are based) and 1949.

Subtraction

Schedule A value of owner-occupied houses.

The adjustments made to the C.S.O. figures were:

Additions[5]

Tax allowances of employees for tools, clothing, etc.

Excess provision for repairs of land and houses by individual landlords, including owner-occupiers.

Income from annuities.

Interest paid by persons to non-persons.

Subtractions

Income in kind.

Interest accruing on National Savings Certificates.

---

[1] *National Income and Expenditure, 1946–51.*

[2] Cmd. 8436, Tables 90 and 110.

[3] The starting point was total gross income from each source, taken from Table 90 of the *94th Report.*

[4] These two items are mentioned in the Inland Revenue report. See p. 96.

[5] The starting point for these estimates was the figures given in Table 2 of the blue book.

Income of non-profit making bodies and the life funds of insurance companies.

Schedule A value of owner-occupied houses.

Tax on building society dividends and interest.

The results of these calculations are given in Appendix Table 9. The comparison is limited to three major sources of personal income: employment income, profits of individuals and firms (which includes professional earnings and income from farming) and rent, interest and dividends received by persons. Employers' insurance contributions and government and private transfers are omitted from the comparison.

Appendix Table 9

Comparisons of Components of Personal Income

Type of income	*Amounts £ million*			*Percentages*		
	Inland Revenue 1949-50	*C.S.O. 1951*	*Survey 1951-52*	*Inland Revenue 1949-50*	*C.S.O. 1951*	*Survey 1951-52*
Employment income	6,800	8,060	7,200	77	77	82
Profits of individuals and firms	950	1,390	1,270	11	13	14
Rent, interest and dividends received by persons ...	1,020	1,040	380	12	10	4
Total of above	8,770	10,490	8,850	100	100	100

Note.—The Inland Revenue and C.S.O. figures refer to the U.K. as a whole; the survey figures are for people in private households in Great Britain.

It will be seen that there is a serious deficiency of investment income in the survey figures: the proportion of investment income in the survey total is only 4 per cent compared with 10 per cent in the C.S.O. estimate. The relative proportions of the two other items to one another in the survey and C.S.O. figures are about the same. The shortage of investment income in the survey figures could be due to: (1) some investment income reported as if it were a salary or the profits of a private business; (2) a disproportionate amount of investment income in the hands of people living in hotels and boarding houses, not covered by the survey; (3) unwillingness of people with investment income to co-operate in the inquiry, and failure of some who did co-operate to report fully this particular source of income. There were also some old ladies who, though willing to help, were unable to do so because all their affairs were in the hands of their solicitor or banker.

It may be noticed in passing that, by comparison with the C.S.O. figures, the Inland Revenue figures show a larger proportion of investment income and a smaller proportion of profits. This is mainly due to the fact that the C.S.O. estimate of profits, which is arrived at partly by different methods, is about £400 million higher than the figures reported by the Inland Revenue.

The survey's estimates of the components of personal income may be further compared with the Inland Revenue figures by income groups. In this case no adjustments have been made to the Inland Revenue figures except to exclude family allowances and income assessed under Schedules A and B (the former because a large proportion accrues to owner-occupiers whose income from this source is excluded in the survey). The comparison, shown in Appendix Table 10, is inevitably very rough but it does suggest that the shortage of investment income in the survey figures is mainly due to a deficiency in the upper income groups. On the other hand the survey figures show a larger proportion of profit income amongst those with incomes of £1,000 and over.

APPENDIX TABLE 10

Components of Personal Income by Income Groups

Income Group[1]	*Per cent of total from these sources accounted for by :*					
	Employment income		*Profits of individuals and firms*		*Interest and dividends*[2]	
	Inland Revenue	*Survey*	*Inland Revenue*	*Survey*	*Inland Revenue*	*Survey*
Under £100	N.A.	62	N.A.	15	N.A.	23
£100—199	92	85	4	7	4	8
£200—299	93	91	4	5	3	4
£300—399	94	94	4	4	2	2
£400—499	93	94	5	5	2	1
£500—599	90	91	7	7	3	2
£600—699	85	88	10	10	5	2
£700—799	77	83	15	15	8	2
£800—999	70	83	19	12	11	5
£1,000—1,499	57	49	27	42	16	9
£1,500 and over	32	44	33	43	35	13
All	81	82	11	14	8	4

[1] The income groups are based on different definitions of income and are for different years. The Inland Revenue figures start at £135.

[2] The survey income under this heading includes rents for property not owner-occupied,

THE SUMMER RECESSION IN 1952[1]

In 'The Paradoxes of 1952', Mr. Holland and I discussed economic developments for the first half-year.[2] We considered the seemingly contradictory movements in various series (trade returns and payments statistics, figures of production and of employment, estimates of resources available and resources used), and found that the apparent paradoxes were partly due to the greatly increased importance of time-lags in a period when many economic variables suddenly changed direction. This was the technical side of the explanation, but there was also a real basis to the central paradox (the difficulty of reconciling total output with total expenditure); this paradox really arose because of the meagre information about one expenditure item, movements in stocks, which turned out to contain the clue to the reconciliation, for there had been a dramatic change from heavy stockbuilding in the second half of 1951 to disinvestment in stocks in 1952.

This paper deals with the third quarter, when the production index reached its lowest level for three years, and yet consumption increased and unemployment actually fell. The questions I shall discuss are: What were the immediate causes of this recession? And how far did it go?

* * * * *

Recent developments have increasingly originated on the 'demand' side rather than the 'supply' side. This paper starts therefore by discussing changes in the items of expenditure and then goes on to deal with movements in production.

BALANCE OF PAYMENTS

In the previous article, we discussed the relation between trade statistics in the trade returns and those in the Balance of Payments White Paper. I have now carried this analysis a stage further, comparing imports by commodity groups and by area, as shown in both statistical sources. The analysis is given in the Appendix. To reconcile the two sources of information is of some intrinsic interest, but the original intention was to find a means of using the trade returns to break the official figures for the half-yearly balance of payments into figures for each quarter, and to continue the estimates of the balance of payments into the second half of 1952, for which there have not yet been any official estimates. But this reconciliation also enables the figures in the Balance of Payments White Paper to be analysed by using the more detailed information in the trade returns: a system of lags and correction factors has been devised in order that information from the trade returns can be fitted into the White Paper's framework.

Quarterly estimates of the balance of payments are given in Table I.[3]

---

[1] Mr. Holland prepared Tables VI and VII, and I have been greatly helped by several discussions with him on the issues raised in this paper.

[2] THE BULLETIN for November–December, 1952.

[3] In order to make it easier to handle individual categories of exports, the figures in the trade returns have been advanced one month, instead of 1½ months as in the previous paper.

Figures for the ' invisible ' items are of course very speculative, but it seems that the balance of payments deteriorated in the third quarter. The fall in exports was particularly marked, the earlier decline in shipments now causing a decline in the arrivals abroad.[1] All types of exports were affected, including metal products, which had up to then largely escaped the trade recession, but especially re-exports. This decline in the value of exports was almost certainly greater than the further fall in imports. So the deficit in visible trade must have widened.

But the surplus on ' invisible ' account must have declined as well. The decline in trade may have hit shipping receipts more than shipping payments; receipts of dividends must reflect the earlier fall in raw material prices; and the third quarter always sees a rise in expenditure by British tourists abroad.

The apparent change from a surplus to deficit in the balance of payments was partly due to seasonal factors, which affected both visible and invisible items, and to this extent it is not so discouraging. But the fall in exports was far greater than the usual seasonal fall. Moreover this deterioration occurred despite a continued improvement in the terms of trade.

Table II shows the balance of payments (omitting interest, profits and dividends from both sides), valuing all items at 1948 prices. Expressed in ' real ' terms, the decline in visible imports does not look so great, because of the further sharp fall in import prices. But the fall in export prices was less sharp, and the fall in export value can therefore be attributed almost wholly to a fall in volume. The volume of most types of exports was reduced to about the 1949 levels.

CONSUMPTION

Table III shows that consumption expenditure continued to rise rapidly, but Table IV indicates that this was mainly due to rises in price, the rise in volume being fairly small, taking ' real ' consumption back only to the first quarter level. The price rise was attributable, of course, largely to the reduction in food subsidies, and although the value of food consumption rose, the volume fell. Elsewhere there were few changes in price, but the general tendency was a slight rise in volume, the recovery in sales of clothing becoming more pronounced, but household goods still lagging.

The explanation doubtless is that personal income was well maintained, despite the fall in activity. Wage-rates continued to rise, reflecting some concessions to demands made when prices were rising and the position of unions was stronger,[2] and unemployment fell from the second-quarter peak. Rough estimates, ignoring seasonal falls due to holidays, suggest that the wage-bill continued to rise through the spring and summer.

---

[1] Since our figures correspond to the definitions of the Balance of Payments White Paper, they refer to changes of ownership, which can be roughly taken to mean arrival overseas.

[2] Some of those re-engaged in the textile industries, however, accepted jobs at lower rates and this may have had some small effect on the wage-bill. A more important practical point is that payments in excess of standard rates (the importance of which was shown in the article by G. Penrice in the London and Cambridge Bulletin for September 1952), may have been slightly whittled down as the shortage of labour grew less acute.

TABLE I

National Balance of Payments at current prices, NOT seasonally corrected.
(£ millions at annual rate)

	1949 *Year*	*1950* *Year*	*1951* *I*	*II*	*III*	*IV*	*Year*	*1952* *I*	*II*	*III*
Imports (f.o.b.)										
(a), (b) Food, drink and tobacco ...	*958*	*1,033*	1,160	1,360	1,460	1,340	*1,330*	1,310	1,200	1,050
(c), (d) Raw materials and petroleum ...	*811*	*1,103*	1,520	1,820	1,920	1,810	*1,769*	1,620	1,530	1,350
(e), (f) Other	*205*	*236*	300	410	440	410	*395*	400	330	340
Total visible imports	*1,974*	*2,372*	2,980	3,590	3,800	3,550	*3,494*	3,340	3,050	2,740
Invisible imports	*581*	*563*	620	710	830	990	*789*	830	830	- 780
Total payments	*2,555*	*2,935*	3,600	4,300	4,630	4,540	*4,283*	4,170	3,880	3,520
Exports (f.o.b.)[1]										
Vehicles	*300*	*380*	400	450	430	500	*440*	480	500	410
Machinery	*360*	*400*	400	450	460	500	*460*	530	570	490
Other metal goods	*230*	*280*	290	300	280	290	*290*	320	370	300
Metal products	*890*	*1,060*	1,090	1,210	1,180	1,290	*1,190*	1,340	1,440	1,210
Textiles and clothing	*360*	*410*	500	580	560	550	*540*	470	400	320
Other manufactures	*310*	*390*	440	500	560	610	*530*	600	580	480
Total manufactures	*1,560*	*1,850*	2,020	2,290	2,290	2,440	*2,260*	2,400	2,420	2,000
Other exports and re-exports	*260*	*380*	430	510	440	440	*460*	610	640	480
Total visible exports...	*1,820*	*2,226*	2,450	2,800	2,730	2,890	*2,715*	3,010	3,060	2,480
Invisible exports	*741*	*967*	1,100	1,290	1,070	950	*1,103*	1,060	1,040	960
Total receipts...	*2,561*	*3,193*	3,550	4,090	3,800	3,840	*3,818*	4,070	4,100	3,440
Surplus (+)	*+6*	*+258*							+220	
or Deficit (—)			—50	—210	—830	—700	*—465*	—100		—80

---

[1] The categories used correspond to those shewn in the Report on Overseas Trade.

Table II

Domestic [1]Balance of Payments at 1948 prices, NOT seasonally corrected
(£ millions at annual rates)

	1949 Year	1950 Year	1951 I	1951 II	1951 III	1951 IV	1951 Year	1952 I	1952 II	1952 III
Imports (f.o.b.)										
(a), (b) Food, drink, tobacco	*970*	*900*	930	1,030	1,040	1,030	*1,010*	980	900	770
(c), (d) Raw Materials, petroleum ...	*770*	*830*	800	980	1,060	980	*960*	890	870	810
(e), (f) Other	*200*	*270*	270	360	270	290	*300*	260	220	210
Total visible imports	*1,940*	*2,000*	2,010	2,360	2,380	2,300	*2,260*	2,120	1,990	1,790
Invisible imports[1]	*510*	*420*	380	410	490	490	*440*	460	490	480
Total payments[1]	*2,450*	*2,420*	2,390	2,770	2,870	2,790	*2,700*	2,580	2,480	2,270
Exports (f.o.b.)										
Vehicles	*290*	*360*	360	380	350	390	*370*	370	380	300
Machinery	*350*	*370*	360	380	390	410	*380*	410	440	370
Other metal goods	*210*	*250*	250	260	230	220	*240*	220	280	200
Total metal products	*850*	*980*	960	1,030	970	1,020	*990*	1,000	1,090	860
Textiles and clothing	*340*	*370*	400	420	380	360	*390*	320	280	250
Other manufactures	*310*	*380*	420	450	470	500	*460*	460	450	400
Total manufactures	*1,500*	*1,740*	1,780	1,890	1,820	1,870	*1,840*	1,780	1,820	1,520
Other exports and re-exports	*250*	*330*	290	360	280	340	*320*	420	430	310
Total visible exports...	*1,750*	*2,060*	2,080	2,260	2,100	2,210	*2,160*	2,200	2,250	1,820
Invisible exports[1]	*560*	*710*	730	830	660	550	*690*	590	640	610
Total receipts[1]	*2,310*	*2,770*	2,810	3,090	2,760	2,760	*2,850*	2,790	2,890	2,430
Surplus[1] (+)		*+350*	+420	+320				+210	+410	+160
or Deficit[1] (—)	*—140*				—110	—30	*—150*			

---

[1] Excluding profits, dividends and interest.

TABLE III. *Personal Consumption at Current Prices, Seasonally Corrected*
(£ millions at annual rates)

	1950	*1951*			*1952*		
	Year	*First Half*	*III*	*IV*	*I*	*II*	*III*
1. Food	*2,627*	2,825	2,885	2,930	3,150	3,220	3.315
2. Beer	*497*	515	535	550	550	585	565
3. Other drink	*237*	275	240	250	265	230	245
4. Tobacco	*767*	795	790	825	830	805	810
5. Rent and rates	*677*	695	705	710	710	730	740
6. Fuel and light	*370*	410	435	410	415	460	480
7. Household goods	*675*	800	680	690	735	665	685
8. Footwear	*174*	195	170	175	185	180	160
9. Clothing	*831*	880	775	820	815	815	840
10. Travel	*345*	360	370	375	385	380	385
11. Entertainments	*175*	180	185	185	190	175	185
12. Other goods and services ...	*1,815*	1,950	2,020	1,980	2,020	2,030	2,060
13. Total	*9,190*	9,880	9,790	9,900	10,250	10,275	10,470

TABLE IV. *Personal Consumption at 1948 Prices, Seasonally Corrected*
(£ millions at annual rates)

	1950	*1951*			*1952*		
	Year	*First Half*	*III*	*IV*	*I*	*II*	*III*
1. Food...	2,376	2,425	2,285	2,315	2,380	2,405	2,360
2. Beer	497	495	490	505	475	500	485
3. Other drink	238	270	230	245	265	225	245
4. Tobacco	746	770	760	785	795	770	770
5. Rent and rates	666	675	675	680	680	685	690
6. Fuel and light	356	370	375	360	355	365	375
7. Household goods	646	680	555	550	590	545	555
8. Footwear	179	160	160	130	145	140	145
9. Clothing	766	780	615	640	655	670	695
10. Travel	341	345	350	355	350	335	340
11. Entertainment	175	175	180	175	180	165	175
12. Other goods and services ...	1,698	1,745	1,740	1,670	1,705	1,710	1,735
Total	8,684	8,890	8,415	8,410	8,575	8,515	8,570

Since the total national wage-bill continued to rise, purchasing power probably increased almost as much. The rising purchasing power in industries with expanding wage-bills was to some extent suppressed by the heavy taxation on marginal income, but the declining wage-bills were also cushioned. Where the wage-bill was reduced by cutting hours, the fall in spendable income was likely to have been less, because of the fall in tax payments; and if the wage-bill declined because of unemployment, the decline will have been partially offset by unemployment benefits, trade union unemployment allowances and (usually later in the period of unemployment) national assistance.[1]

The 'pay-as-you-earn' system softens in another way the effect on purchasing power of a fall in the wage-bill. Those with small families, who have been paying taxes at high rates and lose their jobs, receive rebates of taxation. Even those put on short-time may eventually receive tax rebates. This effect would however be more marked for a recession in the first quarter of the calendar year because the taxes available for repayment would be much greater: it would also be more important for industries paying higher wages than the textile industries. Finally, the expenditure of those who suffered a fall in earnings would have been sustained by reserves held in the form of savings certificates and savings bank deposits.[2]

Since the new pay-as-you-earn tables, introduced after the Budget, reduced substantially the income tax payments even of those whose incomes did not fall (especially by comparison with the second quarter), it is not difficult to see why personal expenditure rose by enough to absorb the rise in food prices and to permit a further rise in the volume of consumption. Moreover prices of clothing, and possibly other durables, almost certainly fell more than the price indices suggest: in a shallow recession, the fall in prices takes the form largely of the disposal of some goods, whether special job lots or ordinary stock, at sub-normal prices; and these special prices are in practice unlikely to be those quoted by retailers in their returns to the Ministry of Labour.[3] In any case, consumers had presumably been buying

---

[1] However the P.E.P. broadsheet 'Planning' (1/12/52) shows that many married women in Lancashire either had not joined the national insurance scheme, or had not paid 45 contributions in the relevant contribution year (often because of the need to take time off for family reasons), and also that only a fraction of those who would have qualified for national assistance actually applied for it.

[2] Some of the economies in expenditure are also made in highly taxed goods, such as tobacco, and therefore do not greatly reduce the demand for the factors of production. It seems that secondary effects of a recession (and thus the 'multiplier') are less than before the war, perhaps a good deal less. The only major development (to offset these influences and increase instability) is that, since imports are restricted, the secondary effects of fluctuations in income are confined to the home economy.

[3] The official description of the index (p. 17) says that sale prices are taken where they apply to the main bulk of shop's trade, and not if they apply only to 'broken ranges'. But even apart from this, 'sale' or other sub-normal prices are probably inadequately represented. The index implied by the official consumption figures for clothing prices has fallen even less this year than the clothing section of the interim index of retail prices, but on the other hand this index showed a decline compared to 1951. The wholesale prices of made-up clothing seem however to have fallen much faster than either retail price index. They may reflect the sale of bargain lots more adequately, but the difference may also be due to the reluctance of retailers to write down the price of stocks.

[*Continued on next page*

less than enough to maintain wardrobes at their customary levels, so there may have been some tendency to buy more apart from the effects of changes in incomes and prices.

INTERNAL COSTS

It seems likely that the 1952 recession would have been milder if our prices had fallen further. If, as we believe, the total wage-bill continued to rise, whilst output fell, labour cost per unit of output must have continued to increase. This is indeed almost certain, and, although many manufacturers will have cut their gross profit per unit of output in the face of sales resistance, it would seem unlikely that total factor cost (i.e. gross profits *plus* wages) per unit of output fell. Another approach tends to support this conclusion. In manufacturing, the only sector for which we can make this calculation, output prices have stayed fairly constant at a level well above that of 1951, whilst import prices fell: this could not have occurred without internal costs rising. The stability of our prices has therefore been due to the rise in internal costs balancing the fall in the cost of imports. This is consistent with the more severe weakening of export than of internal markets noted above: import prices are, from another viewpoint, the income per unit of primary production, and thus their fall in a period of rising British costs caused a fall in the real incomes of our overseas customers.

STOCKS

Table V cannot be derived without the help of various figures of production which are shown later in this article. But that is a statistical matter: it is much easier to calculate the total domestic product for a quarter by adding up the outputs of each industry than by adding up the different types of expenditure. The logical order is to take this table before discussing production.[1]

It was argued in the last article that the wide swings in the bracketed residual for the sum of Government expenditure and capital investment must be attributed almost wholly to swings in the rate of stockbuilding, from positive (i.e. accumulation of stocks) in the autumn of 1951, to negative (i.e. running down stocks) in the spring of 1952. Since this residual continued to run at nearly the same level as in the second quarter, we conclude that stocks were further run down. Fixed capital investment can-hardly have fallen

---

Clothing Price Indices	*1951*	*1952*		
		I	II	III
* Retail Prices' Index (Ministry of Labour, June 1947 = 100)	138	148	147	143
* Implied Consumers' Price Index (Central Statistical Office, 1948=100)	122	125	122	121
Wholesale Price Index (Board of Trade, July, 1949 = 100)	117	117	111	107

Because of differences of weighting and coverage, these indices cannot be expected to move closely parallel to one another, but on the other hand, one would hardly have expected recent movements to have been so different.

*Include footwear.

[1] In this table a rough attempt has been made to correct exports for seasonal fluctuations: no attempt to do this had been made for the previous article.

TABLE V

Gross Domestic Expenditure at 1948 Prices, Seasonally Corrected
(£ millions at annual rates)

	1950		1951			1952	
	Year	*First Half*	*III*	*IV*	*I*	*II*	*III*
Gross domestic product at factor cost...	*10,965*	11,210	11,235	11,170	11,220	10,940	10,815
Net indirect taxes at 1948 rates ...	*1,460*	1,500	1,475	1,495	1,495	1,440	1,455
Gross domestic product at market prices	*12,425*	12,710	12,710	12,665	12,715	12,380	12,270
Statistical discrepancy	*—90*	(+50)	(+50)	(+50)	(+50)	(+50)	(+50)
Gross domestic expenditure	*12,335*	12,760	12,760	12,715	12,765	12,430	12,320
Consumption	*8,685*	8,890	8,415	8,410	8,575	8,515	8,570
Exports	*2,770*	2,935	2,840	2,700	2,780	2,880	2,440
—Imports	*—2,420*	—2,575	—2,870	—2,790	—2,680	—2,370	—2,220
Government Expenditure	*1,915*	(3,510)	(4,375)	(4,395)[1]	(4,090)	(3,405)	(3,530)
Gross domestic capital formation ...							
(a) Fixed	*1,575*						
(b) Stocks	*—190*						
Gross domestic expenditure	*12,335*	12,760	12,760	12,715	12,765	12,430	12,320

[1] This figure was misprinted as 4895 in the previous article.

much in view of the increased rate of building, and the expenditure of the public authorities presumably continued to rise. In fact the reduction of stocks was apparently of the same order of magnitude as in the second quarter.

The work ' apparently ' must be emphasised. Since this is a residual, it will of course be affected by errors in all the items in Table V. At first sight this may seem a very formidable objection, but what concerns us are not errors in this figure, but errors in its changes from quarter to quarter. It seems that the great swing downward in this residual from the second half of 1951 to mid-1952 is too great to be explained by errors in the estimates of changes in other items : it is certain that ' resources available ' (domestic product *plus* imports) fell, and almost certain that all uses of resources rose, except for investment in stocks, which therefore must have fallen substantially.[1]

But the movement in this residual is of course by no means an accurate indication of the change in the investment in stocks. It will be affected both by errors in the other items of Table V and by changes in the current expenditure of public authorities and in fixed capital investment. A particular source of error is that there are special reasons for suspecting that, in the past year, the production index may not have been accurately reflecting changes in ' work done ' : to the extent that this is true, the estimates of the national product, and therefore of the residual in Table V, will be incorrect.

A production index is always subject to a downward bias in as far as new products are not adequately covered by its indicators, but this is far more important in a period when production of other goods is declining, and when there is in fact some switch away from products covered by the index and into new products. Such a switch is believed to have occurred in light engineering, and also possibly in chemicals.

Secondly, the pressure of a buyers' market induces some economies in fuel and materials, which tend to reduce the ratio of input to output. There is thus more 'added value' per unit of output, and *a fortiori* more ' added value ' per unit of input, so that, whether output or input indicators are being used, the production index will overstate the fall in output. As an example, suppose the whole economy saves by economising on imports, but that gross output is maintained in all industries. ' Work done ' in the United Kingdom will really rise because the same gross output is being achieved with less imports, but gross output indicators will be unchanged, and input indicators will actually fall, so that the production index, which uses both output and input indicators, will fall instead of rising.

Thirdly, changes in work-in-progress are not adequately shown by a production index. The extent of the bias in the production index on this account is very hard to determine: it depends on a number of factors—whether output or input indicators are being used, what is the ratio between input and output,[1] how long is the production process and where the change in work-in-progress occurs.

---

[1] An interesting technical point is that although the estimates of the balance of payments have been completely revised since the previous article (the totals now having been built up from estimates for commodity groups, slightly different time-lags assumed, and price indices reconstructed), the differences in the final results are very small, as can be seen by comparing the figures for exports and imports in this table with those on page 411 of Volume 14.

A little more however can be said about the practical importance of this third bias in a period of receding demand. When manufacturers find orders hard to obtain, they will cut down inputs. This will lead to a fall in work-in-progress, small at first, but increasing rapidly as the decline in work-in-progress reaches further along the 'pipeline.'[2] The fall in work-in-progress may continue for weeks, or even months, according to the period of production. Meanwhile 'work done' is falling, but without any change in output indicators. When the fall in input reaches the final products, the output indicators will fall. The main disinvestment in work-in-progress takes place therefore after the fall in orders but before the output indicators fall to their lowest levels. Conversely, in the early stages of an improvement, the increase in activity is absorbed in raising work-in-progress and is not shown by the production index. Thus on these grounds the production index may have been too high in the first two quarters of 1952, but have had a downward bias in the third quarter.

There is however an additional complication. If manufacturers' *sales* rather than *completions* are the ouput indicators, as in the case of clothing (but not of most textile trades) changes in output offset by changes in manufacturers' stocks of finished goods will also fail to be recorded. In a recession, the stocks of finished goods will rise sharply at first, balancing the fall in work-in-progress, and may keep on rising as the recession deepens, unless manufacturers act rapidly to reduce production. After sales turn upwards, however, the new orders will be at first met out of these stocks, so that the indicators may exaggerate the increase in output. For these industries, therefore, the bias of the production index is uncertain, but, both in a recession and in a recovery, it may be on balance opposite to the bias for other industries.

To return to the main argument, little can be said about the extent of bias in the production index: we lack so completely information on the economic behaviour of each industry in response to changes in demand. So movements in the residual item of Table V cannot be considered at all accurate. The discussion above does however tend to suggest that the bias of the production index may have been predominantly upward early in the year. If this is correct, the residual in Table V suggested lower levels of stock disinvestment in the first half of 1952 than actually occurred (because of falling work-in-progress). In the third quarter on the other hand, there are several reasons (new products, input economy, rise in work-in-progress) for a downward bias, and only one (fall in manufacturers' stocks, e.g. finished clothing) for an upward bias.[1] On balance the production index may have been too low, perhaps much too low, causing for the third quarter too high a rate of disinvestment to be inferred from Table V. It seems therefore that the rate of disinvestment in stocks may have fallen between the second and third quarters, but it still seems likely that there was *some* further disinvestment.[2]

---

[1] Or, to put the same point another way, how many intermediate products are included in the index.

[2] The effect is cumulative because not only does the fall cover a larger proportion of the pipeline, but it also reaches more highly finished and thus more valuable work-in-progress.

Whatever happened to the total rate of disinvestment in stocks, there were certainly changes in the rate for various types of stocks. Wholesale textile stocks continued to fall, and there were further reductions in retail stocks, though it is hard to say whether these were more than might be accounted for on seasonal grounds. As we have seen above, work-in-progress probably ceased to fall, and may well have risen over the third quarter. Stocks of goods-in-shipment also fell less sharply. In fact because of the recovery in exports, stocks of goods for sale abroad were on balance little changed (i.e. shipments in June, which are assumed to be the stocks on the seas at June 30th, approximately equalled shipments in September). Stocks of imports on the seas continued however to fall. Another new factor was that, in the third quarter, imports of raw materials as a whole fell to a level that seemed inadequate even for the lower level of production, so that the total stocks of imported materials may have ceased to increase: there were certainly falls in stocks of raw textiles and paper-making materials. There were also large falls in stocks of some domestic materials such as bricks and finished leather, and coal stocks did not rise rapidly last summer, but on the other hand steel stocks continued to mount.

PRODUCTION

Some broad conclusions can now be indicated. Home demand remained strong in the summer, and retail sales rose, but these higher orders were not yet transmitted to industry, because they were met out of stocks at various points along the chain from the retailer to the manufacturer, many stocks falling to uncomfortably low levels. Businesses were however probably glad to reduce stocks still further in view of the difficulty and cost of finding the necessary finance, and in view of the struggle they had had to clear the heavy stocks of 1951. There seems to have been no great confidence that the recovery would be both substantial and permanent. Meanwhile, the export market, which is not separated from the manufacturer by so many layers of intermediaries, was showing a fast recession, a recession at least associated with the improvement in the terms of trade. The fall in the value of exports of manufactures came to about £300m. at 1948 prices. Since manufacturers were not yet getting much benefit from the recovery in the home market, they reduced production by even more than customary in the third quarter—in many cases giving extended holidays to the staff.

---

[1] One further reason for a possible upward bias arises from the method of seasonal correction. If a substantial amount of short-time is being worked, the fall in output due to holidays may be less severe (the holidays in effect being a substitute for some of the short-time). In so far as this has happened, the application of a seasonal correction factor derived from a period of labour shortage would yield too high a figure for the third quarter. But this effect would seem relatively of minor importance, especially since it may be offset (or more than offset) if longer holidays than usual are given by manufacturers in order to work off stocks of finished goods.

[2] This is of course not at all incompatible with the rise in the value of stocks shown by *The Economist's* figures for companies reporting in the fourth quarter (Records and Statistics Supplement, 24/1/53). It seems that there are likely to have been substantial increases in inventories in the year ending last summer, despite the fall in prices, since the volume of stockbuilding in the last two quarters of 1951 exceeded the decline in stocks in the second quarter of 1952. It is rather interesting that the companies reporting in the fourth quarter of 1952 show a smaller increase in stocks during their accounting year than the companies reporting in the third quarter (21 per cent compared to 24 per cent), which is what one would expect if a period of stockbuilding were followed by a mild decline in stocks. *The Economist's* figures reflect price movements as well as volume movements, and also give little weight to distributors' stocks. So they are not very relevant evidence. However their results are at least not incompatible with this analysis and one would expect the next quarter's figures to show a lower rise than 21 per cent.

The gross domestic product (see Table VI) shows therefore a further reduction from the low level of the second quarter : small increases in most sectors did not compensate for the fall in manufacturing output. The picture of a continuously falling output since the beginning of the year is however misleading. The seasonally corrected production index numbers for manufacturing output as a whole indicates that the decline in output was most severe in the months of July and August, though we must bear in mind that seasonal correction is rather unsatisfactory for these months, because of the instability of seasonal influences in the summer. In September, some recovery seems to have started, associated with the recovery in exports passing through our ports.[1] Moreover, as was suggested above, there is reason to suspect a downward bias in the production index at the upwards turning point of a recession.

The information on manufacturing output which is available is shown in Table VII. One of the most disturbing features was the widespread drop in the output of the metals, engineering, and vehicles industries, and in this table an analysis of this sector is given.[2] The order boosk of the shipyards were still full, and output was still impeded mainly by the shortage of plate and by the irregular supply of components; but output of the light electrical engineering and car industries was now being checked by lack of demand, rather than shortage of materials.[3] Firms affected in this way still continued, however, to accumulate steel in anticipation of possible shortage, and the recession did not therefore greatly help firms which were still held up by lack of steel. The recovery in September was also general : since these are seasonally-corrected figures, this means that the rise between August and September was in all cases much more than usual.

In textiles, too, there seems to have been a recovery from the extremely low output levels of the summer. In fact it may have been understated by the index, because of the delay before the full extent of the recovery is re-

---

[1] The exports shown in Tables I and II are supposed however to refer to arrivals abroad, not shipments. They are therefore not affected by the recovery of exports in September, which appear here as a cancellation of the earlier fall in stocks on the sea.

[2] Each series has been seasonally corrected in the way described in the Appendix on seasonal correction in the previous paper.

[3] The expanding sales of electronic goods were not fully shown by the production index because many of them are new products.

TABLE VI

Gross domestic product at 1948 factor cost, seasonally corrected
(£ millions at annual rates)

Sector	1950	1951			1952		
	Year	*First Half*	*III*	*IV*	*I*	*II*	*III*
1. Mining and quarrying	*400*	415	410	415	415	415	415
2. Manufacturing	*4,370*	4,550	4,585	4,520	4,520	4,315	4,160
3. Building and contracting ...	*670*	640	645	655	670	640	665
4. Gas, electricity and water ...	*230*	245	250	240	245	240	255
5. Agriculture, forestry and fishing	*620*	5,360	5,345	5,340	5,370	5,330	5,320
6. Transport and communications	*900*						
7. Distributive trades	*1,365*						
8. Public administration and defence	*675*						
9. Other services	*1,735*						
10. Gross domestic product ...	*10,965*	11,210	11,235	11,170	11,220	10,940	10,815

TABLE VII

Seasonally corrected indices of manufacturing output, 1948=100

Industry	Weight[1]	1950	1951			1952				
		Year	*First Half*	*III*	*IV*	*I*	*II*	*July*	*Aug.*	*Sept.*
1. Metals, engineering and vehicles	352	*114*	121	124	124	127	122	116	115	121
1. Metal manufacture	59	*108*	114	116	117	116	121	118	113	119
ii. Engineering, shipbuilding and electrical goods	160	*116*	124	131	131	135	127	119	120	127
iii. Vehicles	79	*121*	124	125	125	126	125	115	112	120
iv. Other metal trades	54	*106*	114	113	111	112	111	108	104	113
2. Textiles and clothing	125	*117*	122	116	105	103	91	91	90	100
3. Food, drink and tobacco	98	*107*	104	107	106	107	109	117	108	110
4. Other manufacturing	180	*122*	129	128	129	126	117	108	107	112
5. Total manufacturing	755	*116*	121	121	120	120	114	110	108	113

---

[1] Weights are proportional to the net output of the various industries in 1948. The column is inserted to give an indication of the relative importance of the industries contributing to manufacturing output.

[2] Further figures available for the total of manufacturing are :

October	*November*	*December*
116	118	115 (Prov.)

flected in higher output indicators. At first sight the recovery in employment seems from official statistics to have been too slow to support the argument that the textile industry was recovering rapidly, but this is also something of a statistical illusion. The employment figures include ' most, if not all, persons registered as temporarily stopped ', and the numbers ' temporarily stopped ' in textiles and clothing fell rapidly : from 114 thousand on June 16th to 29 thousand on October 13th. The numbers at work must therefore have risen more rapidly than the statistics of ' numbers employed ' suggest, thus bearing out the belief that the third quarter was really predominantly a period of recovery, despite the very low production indices for July and August.[1]

* * * * *

The general conclusions about the summer recession in 1952 are therefore that it was really due to the lingering effects of falls in demand which had already been partly or wholly eliminated by recoveries, and that it was probably less severe than the production index showed. The recovery in overseas sales, and the earlier recovery in home demand, were starting to affect the level of activity, but because of time-lags along the chain of supply the recovery in *production* was as yet small, and further for technical reasons even this recovery may not yet have been fully reflected in the *production index*.

Dudley Seers

---

[1] It should also be remembered that the count is of unemployment on a Monday, and when factories close for a few days there is apparently a greater likelihood that it will be at the end of the week than at the beginning. (*Vide* ' Planning ', *op. cit.*, p. 117). The recovery in the numbers at work may therefore have been even higher than the fall in the numbers ' temporarily stopped ' suggests.

APPENDIX

A Comparison of Trade Statistics in the Trade Returns and in the Balance of Payments White Paper

In the previous paper, there was a discussion of the discrepancy between imports from the trade returns and those from the Balance of Payments White Paper. The analysis has now been taken a stage further, comparison being made by commodities and by area of origin.

First, imports in each of the six commodity groups of the White Paper were compared with the corresponding figures in trade returns. So far as coverage was concerned, these categories were taken to be comparable :[1]

White Paper		*Trade Returns*
(*a*) Food and Feedingstuffs	I	A to H (excl. molasses)
	II	J (excl. petroleum)
	III	P (excl. petroleum) V (starch only)
(*b*) Tobacco	I	I (excl. manufactured)
(*c*) Raw Materials	I	H (molasses only)
	II	A to I, and K to N
	III	C. D. H (plywood only) O. Q. R. Y (plastic materials only)
(*d*) Petroleum	II	J (petroleum only)
	III	P (petroleum only)
(*e*) Machinery and Vehicles	III	G and S
(*f*) Other	I	I (manufactured tobacco only)
	III	remainder
	IV	
	V	

This comparison, incidentally, draws attention to the obsolete classification of the trade and navigation accounts. In particular, to put edible oils together with petroleum in the category ' seeds and nuts for oil, oils, fats, resins and gums ' seems to cause needless difficulties. One special obstacle to economic analysis is that groups such as ' Vehicles ' are not comparable with groups of the same name in the Standard Industrial Classification, so that the export volume indices are not comparable with output indices, nor do the Board of Trade wholesale price indices for industrial inputs or outputs have the same coverage as the corresponding ' average value ' indices for foreign trade. If the trade classification were comparable with Standard Industrial Classification, the task of economic analysis would be much simplified, because one would be able to follow price and volume changes through the various stages from importation to final sale.

---

[1] Following Cmd. 8666, p. 29. It should be noted however that the definitions given there, and followed above, imply the inclusion in ' Food and feedingstuffs ' of beeswax, ' technical tallow ', shellac, rosin, etc. Doubtless curious substances are being added to our food now, but the implication of this classification seems serious.

The results of this comparison are given in Table A.

TABLE A

Imports (c.i.f.) by commodity groups from the trade returns as a percentage of imports (f.o.b.) from the White Paper

	1948	1949	1950		1951		1952
	Year	Year	1st Half	2nd Half	1st Half	2nd Half	1st Half
(a) Food and feedingstuffs ...	116	116	113	115	116	112	123
(b) Tobacco	116	106	87	120	83	107	113
(c) Raw Materials	120	117	111	102	114	113	115
(d) Petroleum	124	123	109	157	150	164	185
(e) Machinery and Vehicles ...	115	135	126	118	73	77	111
(f) Other imports	94	92	96	71	86	83	78
Total	116	115	110	109	113	111	119

In the previous paper it was pointed out that the two documents could differ for three main reasons :

(i) *Period.* Since the trade returns refer to arrivals in the United Kingdom, while the White Paper refers to changes of ownership;

(ii) *Coverage.* Since various commodities such as diamonds, silver and second-hand ships are excluded from the trade returns, whilst the White Paper excludes the landings of British whale fisheries, the trade of the Channel Islands, and imports from U.K.-owned stocks ' paid for and accumulated overseas during the war '.

(iii) *Basis of Valuation.* Since the trade returns value imports c.i.f., whilst the White Paper values than f.o.b.

When trade is fluctuating, the first discrepancy will be important. A rough attempt was made to correct for this by allowing for the estimated delay between change of ownership and importation which approximately corresponds to length of voyage. The average delay has to be estimated for each category. A delay of half a month was used for ' food and feedingstuffs ', because much comes from Eire, the Continent, or North America, but a month for tobacco, raw materials and petroleum, because a large part comes from Asia or Africa. A delay of half a month was also assumed for ' machinery and vehicles ' and ' other imports ' (mainly manufactures), because of the predominance of European and North American sources of supply.

This adjustment is only rough : the dispersion around the chosen lag must in each case be large, and the results may be affected by divergent trends in trade with different areas. The results, shown in Table B, are not by any means necessarily free from the influence of differences in period.

It seems that not much of the fluctuation in the percentages for individual groups of commodities can be eliminated by this adjustment. This is not surprising for the smaller groups—(b), (d), (e) and (f), because the average delay between change of ownership and arrival is bound to be more unstable, and may even be affected by the arrival of individual shipments. The abnormally high percentage shown in Table A for raw materials in the first half

TABLE B

Imports (c.i.f.) by commodity groups from the trade returns, **lagged,** *as a percentage of imports (f.o.b.) from the White Paper*

	1948 Year	1949 Year	1950		1951		1952
			1st Half	2nd Half	1st Half	2nd Half	1st Half
(*a*) Food and Feedingstuffs ...	117	116	114	115	117	111	122
(*b*) Tobacco	99	109	78	122	82	111	100
(*c*) Raw Materials	122	118	114	114	117	112	109
(*d*) Petroleum	126	124	112	165	154	170	180
(*e*) Machinery and vehicles ...	116	135	124	119	75	81	111
(*f*) Other imports	92	93	96	72	89	81	75
Total	117	116	112	115	115	111	115

of 1952 has however been turned into a low percentage, because arrivals in July (£119m.) were much lower than those in January (£160m.). Table B still has a rather high figure for food: since imports of food were not falling very much, the lagging makes little difference. Even if it were increased to a month, food imports in the trade returns would still be 121 per cent of the White Paper figures. A possible explanation for this high margin is however suggested if we look at the low percentage for the second half of 1951: one suspects that, despite the adjustment made, discrepancies in period are still at least partly responsible for the variation in the percentage. For example, in February 1952 there were fairly substantial arrivals of grain from South America, Australia and Eastern Europe which may have been debitted in the White Paper to the second half of 1951. If the trade returns were further lagged so that about £30m. were transferred from the first half of 1952 to the second half of 1951, the table above would show 116 and 117 for each period, figures comparable with earlier percentages.

The second type of difference—in coverage—presumably affects mainly the last two categories. Purchases of second-hand ships would account for the low figures in the trade returns for 1951 of ' machinery and vehicles ', whilst diamonds and silver, excluded from ' other imports ' in the trade returns, might account for this item being below the White Paper figures. It can be inferred that these excluded items became very much more important after the middle of 1950. The increased activity of British whale fisheries may also partly account for the White Paper showing high figures, compared to the trade returns, for imports of food in the second half of 1951.

Discrepancies in the period have been at least partly removed, and we have found that for the first four categories discrepancies in coverage cannot be very important. We are left with the third explanation, variations in average insurance and freight changes relative to f.o.b. prices, as the main cause of the remaining fluctuations in the figures for the first four categories. These variations may be due to changes in the composition of imports or changes in rates for freight and insurance. The rise in the percentage for petroleum after the middle of 1950 can be attributed to an increase in the proportion of crude petroleum imported (because of the expansion of U.K.

refining capacity), and also to the increasing length of journey of refined petrol. More was bought from Venezuela and the Netherlands Antilles during 1951, whilst purchases from the Netherlands were reduced. The tobacco margin is too erratic to interpret: it must depend on what information the Treasury has about the length of storage of British purchases before shipment. The general downward tendency from 1948 to 1950 in the two main groups, food and raw materials, is presumably due to the decline in freight rates relative to material prices, whilst the sharp rise in freight rates early in 1951 must account for the jump in each series. The fall in the second half of 1951 seems more difficult to explain. So far as food is concerned, the explanation has been put forward that the low percentage may be partly attributable to discrepancies in period which have still not been removed. There may however have been a genuine rise in the percentage in 1952, because the reduction of imports from America and Europe must have increased the average freight. Material imports from the American continent rose substantially in 1951 while purchases from Australia fell, which would presumably shorten slightly the average haul and reduce average freight rates, *ceteris paribus*. The further fall in the percentage in 1952 may not mean much, because during a period of rapid change the percentage is rather sensitive to the delay assumed. However the swing towards materials which are expensive per ton (such as non-ferrous metals) would tend to reduce the margin again.

We can analyse fluctuations in the percentage for total imports from another angle, if we compare the imports in both sources not by commodity, but by area of origin. Comparing figures directly we get the results of Table C.

TABLE C

Imports (c.i.f.) by area of origin from the trade returns, as a percentage of imports (f.o.b.) from the White Paper

	1950		*1951*		*1952*
	1st Half	*2nd Half*	*1st Half*	*2nd Half*	*1st Half*
Dollar area	109	114	107	106	118
Other Western hemisphere	86	144	107	115	121
O.E.E.C. countries and their dependencies	115	114	111	107	111
Other non-sterling countries	124	112	137	137	136
Rest of sterling area	108	99	110	110	119
Total	110	109	113	111	119

It would be possible, though very laborious, to collect estimates of the delay between change of ownership and arrival for each country, and build up a lagged total for each area from lagged estimates for each country. This however did not seem worthwhile, for the purposes of this paper, especially since some discrepancies would still remain: rough average delays have been used for each area.[1] Allowing a quarter a month as the average delay for

---

[1] It would also be possible, though very much more laborious still, to conduct the analysis in terms of the commodities from each area.

O.E.E.C. countries and their dependencies, half a month for the dollar area and a month for the remainder,[1] we get :—

TABLE D

Imports (c.i.f.) by area of origin from the trade returns, **lagged,** *as a percentage of imports (f.o.b.) from the White Paper*

	1950		1951		1952
	1st Half	2nd Half	1st Half	2nd Half	1st Half
Dollar area	110	114	113	106	117
Other Western hemisphere	90	135	124	103	112
O.E.E.C. countries and their dependencies	116	116	112	107	110
Other non-sterling countries	123	130	138	139	122
Rest of sterling area	110	107	110	110	117
Total	111	114	115	111	116

The percentage for total imports in the first half of 1952 has been reduced as in Table B, which is not surprising, seeing that the average lag for the total is approximately the same. But, rather disappointingly, the fluctuation in the percentage for several areas seems to have been increased rather than reduced. One might have expected the correction to be more successful when applied by area than when applied by commodity group, because the average duration of voyage must vary a good deal less for each area than for each commodity group. The erratic movements of the percentage for ' other Western hemisphere ' is not surprising, since the imports concerned are small, largely coming from two countries (Argentina and Brazil), and consisting mainly of three commodities (meat, linseed oil and cotton) : the average percentage for the area would be affected by the possibly greater instability of both time of journey and average freight (per £ f.o.b.), because of the failure of fluctuations around the average to ' cancel one another '.

The second reason for discrepancy is difference of coverage. The effect of this is much more difficult to show than in the analysis by commodity, for it may have affected the figures for any of the five areas. The presumed rise in 1951 in imports of items excluded from the trade returns may have affected all areas. In as far as imports of diamonds were responsible for the low percentage for ' other imports ' (Table B), this may explain the percentage for the R.S.A. failing to rise. However imports of second-hand ships, and other items excluded from ' machinery and vehicles' in the trade returns, were apparently heavy in both halves of 1951. They would therefore explain the rather low figures for Western Europe and the Western Hemisphere in 1951 as a whole, although not the fall in the second half-year.

Finally, we come to fluctuations in freight (and insurance) rates relative to f.o.b. prices. The high and rising percentage until 1952 for ' other non-sterling countries ' may be due to imports of oil from Iran, which would be consistent with the sharp fall in 1952. The change to Kuweit as a source of oil would also help explain the rise in the percentage for the R.S.A. in 1952. Otherwise, it remains difficult to pick out the effect of changes in freight rates, presumably because of the wide variations in freight rates for different commodities. The fact that the first three lines all dip in the second half of 1951 and rise in 1952 suggests that movements in the total percentage are not mainly due to changes in length of journey, at least as between the American and European continents.

---

[1] This is perhaps too small an allowance, but the R.S.A. includes Eire, so that an average lag of more than five weeks is being allowed for the remainder. Judged by results, this lag seems from Table D to be fairly satisfactory.

After these analyses, what can we conclude about the movements in the total percentage ? The decline from 1948 to mid-1950 seems to have been due to a decline in freight rates relative to f.o.b. prices. From the middle of 1950, the total percentage was raised, at first by abnormally large arrivals of tobacco, and by the switch to crude petroleum, although this was not shown by a direct comparison of the two documents, because the White Paper figures were inflated by the large purchases at the end of 1950, that did not arrive until 1951. In 1951 freight rates rose and this rise offset the effects of a jump in the importance of items excluded from the trade returns. In the second half of 1951, the percentage fell, partly because of switch to materials from North America which reduced the length of journey, and, seemingly more important, reduced the bulkiness of imports, thus reducing freight rates as a proportion of cargo value. There was also a reduction in freight on food, which seems more difficult to explain, and may have been due to high purchases in this period of foods which did not actually arrive until 1952. The percentage for the total in Table A rose sharply in the first half of 1952. This was partly due to the import cuts, which caused a decline in the total imports and reduced the purchases in the White Paper relative to the arrivals in the trade returns, and also a switch away from Europe and North America to more distant suppliers, involving higher freights. There was also an apparent fall in the imports excluded from the trade returns, and finally freight rates probably rose *relative to f.o.b. prices.*[1] It should be stressed that the discrepancies in period cannot be wholly removed by using lags, and that discrepancies remaining in the figures may be especially important when imports are changing in both total and composition.

A general conclusion suggested by the two analyses is that variations in the composition of imports by commodity are more important than variations in the proportions coming from different areas as influences on the total percentage.

---

[1] It is curious that the Annual Financial and Commercial Review of *The Times* (13/10/52) should have deducted only 10 per cent from the published c.i.f. figures for 1952 (p. ii) to obtain f.o.b. estimates ' in view of the lower freight rates ' : what is relevant is not the absolute level of freight rates but the level relative to f.o.b. prices. In any case the Balance of Payments White Paper hardly suggests a general fall in freight rates.